

# Lawrence Berkeley National Laboratory

## Recent Work

### Title

Journal of Glenn T. Seaborg - 1971-1979, Vol. 1: November 7, 1971-December 31, 1972:

### Permalink

<https://escholarship.org/uc/item/9x534988>

### Author

Seaborg, G.T.

### Publication Date

1990-07-01

PUB-677  
Vol. 1  
July 1990

JOURNAL OF  
**GLENN T. SEABORG**  
1971-

*November 7, 1971-December 31, 1972*

Lawrence Berkeley Laboratory  
University of California



## **DISCLAIMER**

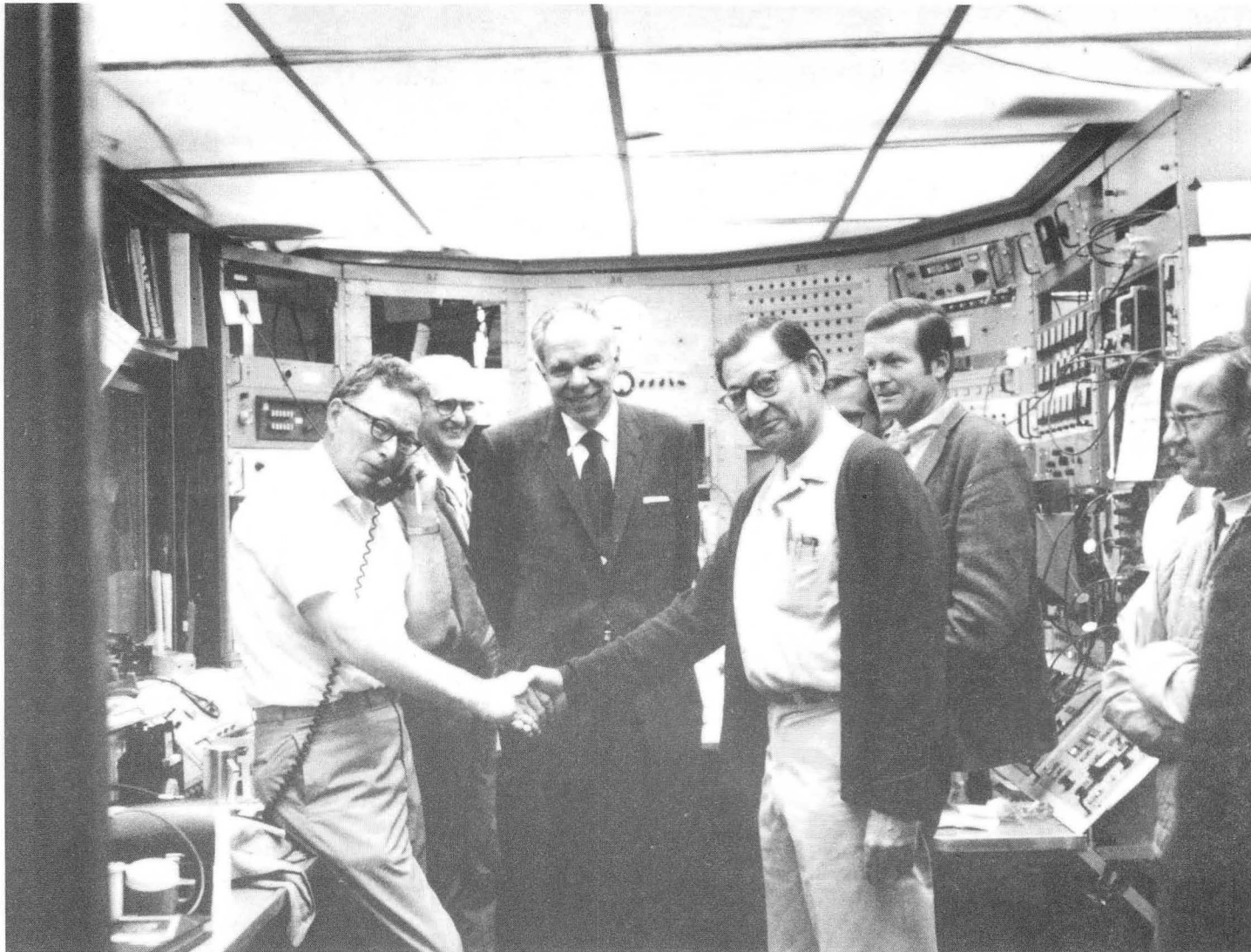
This document was prepared as an account of work sponsored by the United States Government. While this document is believed to contain correct information, neither the United States Government nor any agency thereof, nor the Regents of the University of California, nor any of their employees, makes any warranty, express or implied, or assumes any legal responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by its trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof, or the Regents of the University of California. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof or the Regents of the University of California.

PUB-677

Journal  
of  
**GLENN T. SEABORG**

1971-

VOLUME 1



On the occasion of the first beam at the SuperHILAC  
April 20, 1972

Robert Main, Chet Hatch, Seaborg, Albert Ghiorso, unidentified, Rudy Johnson, Bert Kortegaard

## Preface

I have kept a journal since I was a boy, most of the time recording the daily events in an organized manner each day. For the rest of the time the events were recorded in a non-systematic manner, with the intention that all of the material could be organized at a later date in a systematic daily journal. These volumes fall into the former category.

My life can be logically divided into eight periods. These volumes cover the eighth, and probably final, period, beginning in November 1971.

The eight periods can be summarized as follows:

- I. Childhood in Ishpeming, Michigan, 1912-1922 (10.5 years)  
This period is not covered in a journal. It is described in the prelude to the first volume of my journal (January 1, 1927-August 10, 1934).
- II. Youth in Southern California, 1922-1934 (12 years).  
The first four years of this period are not covered in my journal; a brief description is given in the prelude to the first volume of my journal. My systematic journal begins on January 1, 1927, the middle of my sophomore year in high school in David Starr Jordan High School in the Watts District of Los Angeles. The period concludes with my graduation from UCLA in 1934.
- III. Early Days at the University of California in Berkeley, 1934-1942 (8 years)  
This period is covered in the second (August 11, 1934-June 30, 1939) and third (July 1, 1939-April 17, 1942) volumes of my journal. This includes the time of my graduate work at the University of California at Berkeley (1934-1937), service as the personal research assistant of Gilbert N. Lewis (1937-1939) and as instructor (1939-1941) and assistant professor (1941). Highlights of my research during this period include my participation in the discovery of plutonium and its fissionable isotope (mass number 239) and a number of isotopes very useful in the diagnosis and treatment of disease (such as  $^{131}\text{I}$ ,  $^{60}\text{Co}$  and  $^{99\text{m}}\text{Tc}$ ).
- IV. Wartime Metallurgical Laboratory, University of Chicago, April 19, 1942- May 19, 1946 (4 years)  
During this period I was responsible for the development of the chemical processes used in the production of plutonium and participated in the discovery of the elements americium (atomic number 95) and curium (atomic number 96). This period is covered by four volumes: April 1942- April 1943, May 1943- April 1944, May 1944- April 1945, and May 1945- May 1946.
- V. University of California at Berkeley, May 20, 1946- June 30, 1958 (12 years)  
During this time I served as Professor of Chemistry and Director of the Division of Nuclear Chemistry of the Radiation Laboratory. I participated in the discovery

of berkelium (atomic number 97), californium (98), einsteinium (99), fermium (100), mendeleevium (101), and nobelium (102). Other responsibilities included service during the second half of this period as the faculty athletic representative for the Berkeley campus to the Pacific Coast Intercollegiate Athletic Conference. The journal material for this period was not assembled on a current daily basis, has in the meantime been assembled and is now in the process of publication.

VI. Chancellor, University of California at Berkeley, covering the period July 1, 1958 - January 31, 1961 (2.5 years)

Unusually successful in athletics, Berkeley teams won the NCAA basketball championship in 1959; the football team played in the Rose Bowl on January 1, 1959; the rowing team won the National Intercollegiate Regatta Association championship in 1960; the baseball team won the California Intercollegiate Baseball Association championship in 1960; and the water polo teams won the AAU water polo championships in 1959 and 1960.

Buildings completed during my tenure were Kroeber Hall, the Lowie Museum of Anthropology, Campbell Hall, the first eight residence halls and the Strawberry Canyon recreational complex; and plans were made for building the Student Union complex, married student housing, Latimer Hall, Barrows Hall, Tolman Hall, the University Art Museum, the biochemistry building and the virus laboratory. The College of Environmental Design was established; the Space Sciences Laboratory had its origin as well as the Earl Warren Legal Center and the Laboratory of Chemical Biodynamics; also established were a variety of new research institutes, centers and facilities in diverse fields. This period, for which the material was assembled from my extensive notes and supporting material, is covered in three journals: July 1, 1958-June 30, 1959; July 1, 1959-June 30, 1960; and July 1, 1960-January 31, 1961.

VII. Chairman, U.S. Atomic Energy Commission, covering period February 1, 1961 - November 6, 1971 (10.5 years)

The systematic journal covering this period has been published in 26 volumes (with one more volume in preparation). The topics covered in these volumes include the Limited Test Ban Treaty (LTBT), the Non-Proliferation Treaty (NPT), the Strategic Arms Limitation Treaty (SALT) and ABM Treaty, the Cuban Missile Crisis, the program of international cooperation (including my visits to 60 countries), the program for support of research, the Los Alamos Meson Facility and the 200 Bev Accelerator, the National Transplutonium Production Program, the civilian nuclear power reactor program, the Raw Materials Program, the Gas Centrifuge Program, the Cutback in Production of Fissionable Materials, the Regulatory Program, the Radioisotopes Program, the nuclear power in space program, the nuclear weapons testing program, the Plowshare Program, the

Controlled Thermonuclear Research Program (CTR), the Nuclear Education and Training Program, and the Technical Information and Exhibits Program.

- VIII. The University of California, Berkeley, November 7, 1971- These volumes of a systematic journal begin with November 7, 1971, and are being issued as they are prepared for publication.

It is interesting to try to rank these periods in terms of which I have found most exciting. Certainly the period of highest excitement would be Period IV, the time of my wartime work at the Metallurgical Laboratory. Next would come Period III, the time of discovery of plutonium, followed by Period V, the time of discovery of numerous other transuranium elements. Next would come Period VII, the time of my chairmanship of the U.S. Atomic Energy Commission and then Period VI, the time of my chancellorship at Berkeley. The other Periods I, II, and VIII would be difficult to rate on such a scale.

The colors of the covers of my journals for the various periods range from red, across the optical spectrum, to blue. Thus the three volumes covering Periods II and III have red covers. The four volumes covering period IV will, when reprinted, have red-orange covers; the supply of the present printing in brown covers has been exhausted. The twelve or so volumes covering the twelve years of Period V will have orange covers. The three volumes covering Period VI have yellow covers. The 27 volumes covering period VII have green covers. The estimated 20 (and more) volumes covering Period VIII will have blue covers. The total of the number of volumes will be more than 70, and they average some 500-600 pages each. This averages close to one volume per year for the 63.5 years covered (so far) by my journal.

The source material and backup material for these more than 70 volumes consists of hundreds of thousands of documents that are available because I have saved and preserved essentially all my documents throughout my career, beginning with my kindergarten days. The majority of these documents are being transferred to the Library of Congress, although some of the early documents will be housed in the Bancroft Library of the University of California at Berkeley. Copies of the journals will be housed in a number of libraries and repositories. For example, the 27 volumes corresponding to Period VII (Chairman, U.S. Atomic Energy Commission, 1961-1971) are being placed in the Kennedy, Johnson and Nixon Presidential Libraries, the Bancroft Library at Berkeley, the Main Library at UCLA, the History of Science library at the University of California at Berkeley, the Department of History at the University of California at Santa Barbara, The Department of Energy - History Division, the U.S. Nuclear Regulatory Commission, the Seaborg Center at Northern Michigan University, the Library of Congress, the Hoover Institute of Stanford University, and the National Historical Publications and Records Commission (National Archives).

This set of my journals covers Period VIII of my life, beginning on November 7, 1971, upon my return from Washington, D.C., where I had served as Chairman of the U.S. Atomic Energy Commission for some ten and one-half years.

## INTRODUCTION

Soon after my return to the University of California at Berkeley, I was appointed University Professor of Chemistry (a title held by some dozen professors throughout the statewide nine-campus University of California with its 7,500 faculty members. I was also appointed head of the Nuclear Chemistry Division (soon to become the Nuclear Science Division) of the Lawrence Radiation Laboratory (soon to become the Lawrence Berkeley Laboratory) in which position I served until 1975, when I was appointed Associate Director at Large of the Lawrence Berkeley Laboratory, a position that I have held since. I resumed my collaboration in research with my long-time associate Albert Ghiorso and joined his associates Mike Nitschke, Matti Nurmi, Bob Silva, Almon Larsh, James Harris, and Robert Main in some of my research program. Iz Perlman and Sam Markowitz also participated to some extent. Diana Lee, who joined my research group in 1974, played a central role in assisting and collaborating with the researchers.

During this period I conducted research with a group of graduate and undergraduate students, and visiting and postdoctoral scientists. My graduate students and their Ph.D. theses included:

Irwin Binder, "A Radiochemical Study of the Reactions of Heavy Ions with Gold", December 1977

David J. Morrissey, "Study of the Role of Complete Fusion in the Reaction of  $^{48}\text{Ca}$  and  $^{56}\text{Fe}$  with Cerium and Terbium," June 1978

Kimberly E. Williams, "Radiochemical Studies of Neutron Deficient Actinide Isotopes," December 1978

Elizabeth A. Rauscher, "Coupled Channel Alpha Decay Theory for Even- and Odd-Mass Light and Heavy Nuclei," December 1979

Rodney H. Banks, "Preparation and Spectroscopic Properties of Three New Actinide IV Borohydrides," June 1980

Kenneth E. Thomas, III, "Transfer Products from the Reactions of Heavy Ions with Heavy Nuclei," June 1980

Rose M. McFarland, "Recoil Range Studies of Heavy Products of Multinucleon Transfer from  $^{18}\text{O}$  to  $^{245}\text{Cm}$  +  $^{249}\text{Cf}$ ," September 1982

L. Patrick Somerville, "Observation of New Spontaneous Fission Activities from Elements 100 to 105," June 1982

Yoshi Morita, "Angular Distributions of Target Fragments from the Reactions of 292 MeV - 25.2 GeV  $^{12}\text{C}$  with  $^{197}\text{Au}$  and  $^{238}\text{U}$ " May 1983

Patrick L. McGaughey, "Intermediate and High Energy Reactions of Uranium with Iron and Carbon," June 1983

Kenton J. Moody, "Actinide Production in the Reactions of Heavy Ions with Curium-248," June 1983

Saburo Yashita, "The Identification of New Astatine Isotopes Using the Gas-Filled Magnetic Separator, SASSY," February 1984

Ronald S. Shinomoto, "Methyltrihydroborate Complexes of the Lanthanides and Actinides," August 1984

Robert B. Welch, "Actinide Production from Xenon Bombardments," January 1985

Kenneth E. Gregorich, "Actinide Production in  $^{136}\text{Xe}$  Bombardments of  $^{249}\text{Cf}$ ," August 1985

P. A. Wilmarth, "Beta-Delayed Proton Emission in Neutron-Deficient Lanthanide Isotopes," September 1988

Wing Kot, "Optical and Magnetic Properties of Some Actinide Ions," 1990.

Students who obtained Master's degrees working with me included:

Steven Blau, "Effects of Particle Evaporation on Angular Momentum of the Emitting Fragment for Deep Inelastic and Compound Nuclear Reactions"

Charles Mark Phillips (Plan II- No Thesis)

Edward Henry Sebesta, "Analysis and Development of FACE Automatic Apparatus for Rapid Identification of Transuranium Isotopes"

Among the postdoctoral scientists and visiting graduate students were Carol and Jose Alonso (1972-74), Patricia Baisden (1975-78), Coreen Casey (various visits 1985-89), Luo Cheng (1980-81), Burkhard Fricke (1972, 1975), Hisaako Kudo (1981-82), R. Eric Leber (1976-77), C. H. Lee (1984), Wenxin Li (1982-84), David Morrissey (1978-80), Chris Ortel (1979-81), Roland J. Otto (1974-78), L. Sihver (1985, 1987), and Satoru Tanaka (1982-83). Among the visiting scientists (some from foreign countries) were Kjell Aleklett (1978-79, and many times in the 1980s), Reinhard Brandt (many times in the 1980s), William R. Daniels (1972), Gerhard Dersch (1984), Gerhard Feige (1984), Malcolm M. Fowler (1974-75), Heinz Gaggeler (many times in the 1980s), H. Groening (1981), Darleane C. Hoffman (1978-79), James Hogan (1978-79), Phil Horwitz (1972), Won Mak Jae (1978-80), Jens Kratz (1972-74, 1986, 1988), P. Lemmertz (many times in the 1980s), Jol Liljenzin (1972-73), Yuan-Fang Liu (1980-81), Walter Loveland (1976-77, 1980, 1983-84, and very many other times), Nicolai Mikheev (1977), Ted Norris (1973-74), Toisto Raunemaa (1973-74), Michel de Saint Simon (1977), Mathias Schädel (many times in the 1980s), N. Trautmann (1972 and other visits), Hans von Gunten (1980-81), Kurt Wolfsberg (1972), Z. Xu (1986-87), Yu-wen Yu (summers 1982-84), and Ivo Zvara (1976). We have also had interesting visits from G. N. Flerov and Yuri Oganessian of the Soviet Dubna Laboratory. Undergraduate research students included Elissa Bicknese, Judith Brodtkin, Jose Carvalho, Wayne Chan, Simon Chin, Michela DiCasa, Elaine Dong, Dana Dunlavey, Linda England, Jeff Frank, Larry Frank, Carolyn Gottsteinn, Barbara V. Jacak, Patricia Juergens, Mike Kilroy, Robert Klein, Joy Kobayashi, R. H. Kraus, Walter Kwan, Huan Le, Cynthia Lee, Wayne Marsh, Hung Nguyen, Bonner Nishida, Michael Perry, Marilyn Rodder, Martin Schulman, and Huy Trinh.



The accelerators used in connection with this research were the SuperHILAC and the 88-Inch Cyclotron. In addition, research was conducted using the Bevatron and Bevalac (the combination of the SuperHILAC, as injector, and the Bevatron--this combination was built as a result of the suggestion of Ghiorso) with heavy ions in the areas of intermediate and relativistic energies.

The research program was concerned largely with an investigation of the nuclear properties of the heavy transuranium elements, the synthesis and identification of new isotopes of the transuranium elements, the study of the chemical properties of the transuranium elements and the attempts to synthesize and identify new transuranium elements including superheavy elements (elements in the region of atomic number 114 and neutron number 184). The research program also encompassed a broad and diverse radiochemical study of heavy-ion-induced reactions, which included one of the earliest observations and investigation of the inelastic transfer interaction. At various times Roland Otto, David Morrissey, and Darleane Hoffman shared in the direction of the research.

In 1974 I was associated with a group that succeeded in synthesizing and identifying an isotope of the new element with the atomic number 106; the group consisted of Albert Ghiorso, Mike Nitschke, Jose Alonso, Carol Alonso and Matti Nurmi of the Lawrence Berkeley Laboratory and Ken Hulet and Ron Loughheed of the Lawrence Livermore National Laboratory.

More recently Ghiorso has been attempting to synthesize and identify an isotope or number of isotopes of element 110 with the help of Pat Somerville, Diana Lee, and a few others.

My collaboration with Walter Loveland, which has included use of the Bevatron and Bevalac and accelerators in other laboratories, began in 1976 when he spent a sabbatical leave in Berkeley and has continued to date (1990). Our collaborative research program has involved: (a) the use of radiochemical techniques to study the mechanism of nucleus-nucleus collisions and (b) critical reviews of the status of heavy element research. Research in the former area began with measurements of the target fragment mass distributions in relativistic heavy ion reactions, culminating in seminal papers in 1976 and 1989 explaining, respectively, the shape of these distributions and the concept of total kinetic energy scaling. The radiochemical techniques, however, were most appropriately applied to the study of intermediate energy (10-100 MeV/nucleon) collisions because of the larger particle beam intensities available in this energy region. In studies of intermediate energy reactions, the superior (Z,A) resolution and the lack of energy thresholds in the radiochemical techniques led to the discovery of the principal reaction channel, heavy residue formation, and its characterization (1986-90). Important critical reviews of the properties of heavy and superheavy elements were published in 1979, 1985, and 1990.

Other Department of Chemistry faculty associated with the laboratory's Nuclear Chemistry (Nuclear Science) Division included Professors Joseph Cerny, Samuel S. Markowitz (who joined the Applied Science Division), Luciano G. Moretto, John O. Rasmussen, David A. Shirley (who became director of the Materials and Molecular Research Division and then director of the Lawrence Berkeley Laboratory), and David H. Templeton (who joined the Materials and Molecular Research Division). I was succeeded as Director of the Nuclear Chemistry (Nuclear Science) Division by Bernard Harvey, who was followed by Joseph Cerny and then James Symons.

I also pursued my interest in the chemical properties of the actinide elements by involving myself in a research program with Norman Edelstein (some of my graduate students performed their research with him). In this connection I was associated with other Department of Chemistry faculty members--Kenneth N. Raymond, Richard Andersen, Neil Bartlett, Andrew Streitwieser--and their periodic "Actinide Chemistry Seminar."

In 1984 Darleane Hoffman joined the Department of Chemistry on campus as a Professor and the Nuclear Science Division of the Lawrence Berkeley Laboratory. She assumed the responsibility for much of my research program (to some extent, this became a shared responsibility) and for the incoming graduate students in this general area of research. The graduate students who have worked with or are working with Professor Hoffman include Robert Chasteler, Kenneth Czerwinski, Nancy Hannink, Roger Henderson, Dianne Bennett, Carolyn Gannett, Howard Hall, Robert Chadwick, Peter Johannson, John Leyba, Bobby Kadkhodayan, and Steven Kreek. The undergraduate students who worked with Professor Hoffman included Raj Agarwal, Atlee B. Benally, Elizabeth Brady, Aaron Charlop, Y. Y. Chu, David Dorsett, George Haynes, Chris Kacher, Lithium Lin, Teresita Padron, and Yasmin Williams. Visiting scientists (including some graduate students from other institutions) included Urs Baltensperger, Helmut Barth, Reinhard Brandt, Willie Brüchle, Shanyu Cai, Kuen-Bey Chen, Hans Gäggeler, Yuichi Hatsukawa, Mathias Heck, Gunter Herrmann, Dieter Jost, Jens Kratz, Christoph Lienert, Walter Loveland, Ann Mueller, Ya Nai-Qi, Hiromichi Nakahara, H. A. O'Brien, Mathias Schädel, Ulrich Scherer, K. Sümmerer, Andreas Türler, Hans von Gunten, C. M. Wai, and Yu-wen Yu.

Biweekly luncheon meetings of our research group were held in my office. This group assumed the colloquial appellation "Superheavy Element Interlaboratory Khemists" or SHEIKS, a name that lost its descriptive character with the passage of time, but which has nevertheless been retained up to the present time and will continue to be used.

I taught both the Freshman Chemistry laboratory sections 1972-1982 and the Nuclear Chemistry course (Chemistry 123) with John Rasmussen in the winter quarter of 1978. I met once a week for lunch with a group of undergraduate chemistry majors, called the "Freshman Cluster Group." I also have given numerous lectures to undergraduate classes such as freshman chemistry, nuclear chemistry and political science classes.

During this period my office staff was under the leadership of three outstanding administrative assistants, first, from 1971-76 Sheila Saxby; from 1977-83 Pat Johnson; and, finally, and especially, from 1983 on Sherrill Whyte. Supporting staff included Sharon Date, Margie Hollander, June Jackson, Carol James, Sylvia Kihara, Jane Kingston, Lin Lorenz, Janice Ludwig, Delores Mason, Marta Munoz, Grace Nubla, Debbie Olson, Joy Perkins, Zoe Randolph, Pamela Taylor, Kathy Vanderhagen, Peggy Yamada, and an army of temporary help.

During 1972 I served as President of the American Association for the Advancement of Science and during 1973 as Chairman of the Board of Directors of the AAAS. While serving in these offices I was instrumental in establishing the office of International Science. It was largely in this connection that the Interciencia Association was established.

From May 24 to June 10, 1973, my wife Helen and I visited the People's Republic of China. We were members of a team including physical and biological scientists and representatives of the social sciences and the humanities (and a few of their wives) sponsored by the U.S. Committee for Scholarly Communication with the People's Republic of China. Ours was the first group to visit the People's Republic of China on a semi-official basis for the purpose of negotiating agreements for exchange of people and visitors between our two countries. While in Peking we had the pleasure of attending a meeting in the Great Hall of the People (National People's Congress Building) in T'ien An Men Square in Peking. Attending, in addition to our group, were members of the Chinese Academy of Sciences, the Chinese Science and Technology Association and many leaders of Chinese scientific institutes and laboratories. Of special interest was the attendance at this meeting of Chinese Premier Chou En-lai, whom we all met and who played an active role in negotiating the exchange agreement with the members of our delegation. During this visit to the People's Republic of China, we visited, besides Peking, Shumchun, Canton, Nanking, Wu-hsi, Soo-chow, Shanghai and Ch'ang Sha. I kept a complete journal during this visit, which was published in a document entitled "China Journal."

I visited the People's Republic of China again from May 17-June 11, 1978, as chairman of a delegation for "Pure and Applied Chemistry." During this trip we visited Peking, Talien, Ch'ang Chun, Chenyang, Fushun, Shenyang, Shanghai, Hangchou, Sian and Lanchow. Again I kept a complete journal which was published in a document entitled, "China Revisited." (A book, Chemistry and Chemical Engineering in the People's Republic of China, was also published by the American Chemical Society.)

My journal recounts a number of visits of delegations from the People's Republic of China to the United States, when I helped play host to them both in Berkeley and in Washington, D.C.

I served as President-elect of the American Chemical Society in 1975. I then served as President of the ACS in 1976 (the year of its centennial) and as Past-President in 1977. I served as a member of the ACS Board of Directors during each of these three years. At the centennial banquet held in New York in April 1976 I had the pleasure of introducing Senator Ted Kennedy as our keynote speaker. Also at the time of the New York centennial meeting I played host to a gathering of heads of chemical societies throughout the world, and at that time I proposed the creation of an International Chemical Society. Although such a society never came to fruition, one consequence of my proposal was the creation of the affiliate scheme of the International Union of Pure and Applied Chemistry which came into effect in February, 1985.

I served as founding president of the International Organization for Chemical Sciences in Development (IOCD) beginning in 1981 and have continued in that post. The aim of this organization is to help to provide the benefits of chemistry to people in developing countries of the world. IOCD's working groups draw scientists from Third World countries into collaboration with scientists from industrial countries into research focused on areas of vital developmental concern: unchecked population growth, persisting parasitic diseases, and declining agricultural productivity. The scientists in IOCD's working groups represent the broad geographic regions of Africa, Asia, Latin America, and the Middle East. IOCD's Working Group on Tropical Diseases, for example, involves 16 laboratories around the world in its work. By 1989

the group had tested over 100 chemical compounds, several of which show promise in treating devastating ailments found in developing countries. Another important way IOCD is assisting Third World scientists is to offer them certain technical services at no charge. IOCD's scheme of Analytical Service Centers will submit a scientist's compound to analysis by magnetic resonance spectroscopy or mass spectroscopy, for example; methods that require sophisticated and costly apparatus not often available in Third World countries. Similarly, the IOCD Biological Screening Service will test chemical compounds for their biological activity.

In the area of international cooperation in science I am particularly proud that I suggested and helped to initiate the Interciencia Association of the American Association for the Advancement in Science (which encourages collaboration with our neighbors in Latin America) and the Affiliate Scheme of the International Union of Pure and Applied Chemistry (which serves as a sort of international chemical society).

Having been involved with the Lawrence Hall of Science on the Berkeley campus since its inception in the fall of 1958, I immediately resumed an active role on its Faculty Advisory Committee upon my return from Washington, later serving as the chairman of this committee. I then served as director of the Lawrence Hall of Science from 1982-1984 and have served as chairman since 1984. The Lawrence Hall of Science has and is playing a leadership role in solving the national crisis in pre-college science and math education. It carries on in three areas: 1) to improve the quality of mathematics and science instruction for the benefit of pre-collegiate students through the development of innovative math and science courses and accompanying curriculum materials and teaching training services; 2) to augment pre-college mathematics and science instruction provided by schools by offering special mathematics and science courses at the Hall; and 3) to enhance the knowledge, appreciation, and enjoyment of mathematics and science for the general public by providing the community with a math and science center.

The Hall's curriculum materials have a widespread use on a national scale and substantial use on an international scale. The overall success of the Hall's program has led to an extreme shortage of space needed to accommodate the expanding efforts--preliminary plans have been prepared for an addition to the building and fundrasing for this is in progress (in 1990).

I served as a member of the National Commission on Excellence in Education (NCEE), which worked under the chairmanship of David P. Gardner from the fall of 1981 until April 1983 to produce its report, "A Nation At Risk." We presented this report to President Ronald Reagan on April 26, 1983. This report has had a substantial impact on the national reform movement toward improving the status of pre-college education, especially science and math education, in the United States.

More recently I served as co-chairman with Secretary of Energy James D. Watkins at a summit conference on pre-college science and math education held at the Lawrence Hall of Science October 9-10, 1989. This conference was attended by representatives of the National Science Foundation, the National Academy of Sciences, the National Aeronautics and Space Administration, the U.S. Department of Education, the U.S. Department of Energy, the President's Science Advisor, representatives of many of the DOE laboratories and representatives of many organizations

concerned with education, such as the National Science Teachers Association, the American Federation of Teachers, the American Association for the Advancement of Science, the National Education Association, and the Triangle Coalition for Science and Technology Education. The report covering this conference was issued on May 22, 1990. It makes a call for the following reforms by the year 2000: a core curriculum in science and mathematics for preschool through high school; high quality teacher training in hands-on science for 10% of the nation's teachers each year; a significant increase in female, minority, disabled, and disadvantaged students completing high school and advancing to graduate education, careers in mathematics and science, and science teacher training; the establishment within the next 24 months and expansion of community alliances involving government, education, and business to improve mathematics and science education; and the development in the U.S. of a workforce equipped to meet the technological demands of the 21st century.

My wife Helen and I attended the Nobel ceremonies in Stockholm in 1975 on the occasion of the 75th anniversary of the Nobel Ceremony and have attended the Nobel ceremonies in the years 1978, 1979, 1980, and 1985. We visited many of my relatives in Sweden on these trips as well as on a number of other trips to Sweden.

I have continued to serve as president of Science Service (a post that I have held since 1966). Science Service is the national organization that is devoted to an increase in the public understanding of science; it conducts the annual Science Talent Search in Washington, D.C., and the annual International Science and Engineering Fair, and publishes the very effective weekly Science News magazine. I have continued during this period to interview the 40 Science Talent Search finalists in my role as a judge; since 1965 I have conducted this interview 26 times, for a total of 1,040 finalists. In March 1989 I had the pleasure of serving as co-host when President George Bush visited the Science Talent Search exhibits and addressed the Science Talent Search finalists and other spectators in the auditorium of the National Academy of Sciences building. (I had the responsibility of briefing President Bush on so-called "cold fusion" on a visit with him in the Oval Office of the White House in April 1989.)

I have served as a member of the Board of Directors of the World Future Society since 1969 and have attended the annual meetings of the Board, each year during this period. In 1974 I had the pleasure of introducing Vice President Gerald Ford at a symposium on "Energy: Today's Choices, Tomorrow's Opportunities" sponsored by the World Future Society in Washington, D.C.

During much of this period I have been active with the American Academy of Achievement in connection with their annual "Salute to Excellence" symposia and banquet where the achievements of hundreds of students and American leaders in all walks of life are recognized. In 1984 I met President Jimmy Carter, one of the honorees at the banquet that year. Others that Helen and I have met at the annual banquets include Mortimer Adler, Tom Brokaw, Frank Capra, Olivia DeHaviliand, Clint Eastwood, Phil Esposito, Bob Feller, Betty Ford, Gordon Getty, Helen Hayes, Hal Holbrook, Bill Honig, Kareem Abdul Jabbar, Robert Jarvik, Michael Jordan, Jim Lehrer, George Lucas, Henry Mancini, Ralph Nader, Sandra Day O'Connor, Walter Payton, Claude Pepper, Ronald Reagan, Burt Reynolds, Brooks Robinson, Pete Rozelle, Rosalyn Russell, Diane

Sawyer, Tom Selleck, Dinah Shore, Beverly Sills, John Sununu, Joe Theisman, Lowell Thomas, Ted Turner, Faye Wattleton, Herschel Walker, Bill Walsh, Oprah Winfrey and Andrew Young.

During much of 1972 and 1973 I served on the 80-member Citizens Task Force of the East Bay Regional Park District (EBRPD) that had the responsibility of advising the EBRPD on a master plan for the future expansion and operations of the District. I served as chairman of the Trails Committee. Joe Bort served as chairman of the Citizens Task Force. I participated during this period in a number of hikes and exploratory trips with members of the Citizens Task Force which were conducted for the purpose of accumulating data that would be helpful in preparing our report to the District. Our Citizens Task Force submitted a master plan which was accepted and put into force.

Following this experience with the Citizens Task Force, in the succeeding years Helen and I on weekends took multitudinous hikes, often with members of the Mt. Diablo Regional Group of the Sierra Club (I sometimes served as leader) in the various parks of the East Bay Regional Park District and their interconnecting trails.

In 1978 I became a charter member of the newly formed American Hiking Society. When Helen and I attended one of the Board meetings of the American Hiking Society in Vienna, Virginia (a suburb of Washington, D.C.), at which the idea for a cross-country hike was discussed, I made the suggestion that the decision should be made to go ahead with it; and it was accepted. I said that I would be willing to be responsible for scouting and laying out the trail across California for the cross-country hike, which became known as "HikaNation." During weekends Helen and I together with our friends, Joe and Betty Goldstein, explored the route and laid out the path for the hike across California. Jeannie Harmon acted as pathfinder for the state of California portion. The HikaNation started in San Francisco on Saturday, April 12, 1980. A group of some 6,000 people walked across the Bay Bridge early Sunday morning April 13th (for which I had helped obtain permission from Sacramento). Helen and I accompanied the group across much of California. The participating group consisted of 100-200 people. The route that we had laid out was about 265 miles long and was traversed in 21 hiking days, with an average of about 13 miles per day. Helen and I left the group at the Nevada border; it continued with a core group of about 40 people across the United States. Helen and I joined the HikaNation group at Harper's Ferry on May 9, 1981, and hiked with them along the C&O Canal tow path to Washington, D.C., where we arrived on May 13, 1981.

Starting in June 1990, our son Eric and his friend Ellen Dudley are scouting, under the auspices of the American Hiking Society and Backpacker magazine, the route of a west-east trail, "The American Discovery Trail," across the United States (from San Francisco at the Pacific Ocean to Delaware at the Atlantic Ocean).

As a result of our contacts with the HikaNation group and in connection with laying out the trail across California, Helen and I bought a vacation home in Strawberry on Highway 50 in 1980, which we used as a weekend and summer vacation spot and origin of our hikes in the Sierra throughout the 1980s.

I later served on the Board of Directors (1980 - 1984) and for a period as vice president (1981-1982) of the American Hiking Society and continue to serve on the Advisory Board. My son Eric served on the Board of Directors and also served three years as president of the American Hiking Society. He also serves as an editor in their publications.

During this period Helen and I made a number of trips to Ishpeming, Michigan (my birthplace). On one of these trips, in the summer of 1980, we purchased the Seaborg house at 639 East Division Street from Oscar Kurin, who owned it at that time. This house was purchased by my grandfather, Jon Eric Seaborg, in about 1882, when my father was about two years old, and is the house in which my father and his sisters and brothers were raised. It was sold to the Kurin family in about 1914 and remained in their possession until Oscar Kurin sold it back to me in 1980 for a purchase price of \$6,700. It is now the oldest house in Ishpeming. On this same visit to Ishpeming (1980) I attended the 50th anniversary reunion of the high school graduation class of 1930, the class of my schoolmates in Ishpeming until I left in October 1922. I served as the speaker at the reunion banquet on this occasion (Summer of 1980).

In 1978 I was asked to join, in the role of president, the Swedish Council of America (an umbrella organization of Swedish-American societies). I served as president for four years and then continued to serve on the Board of Directors. On October 27, 1984, the Swedish Council of America awarded jointly to me and Ann-Margret their annual Great Swedish Heritage Award at their meeting in Seattle. I also served during this period, and continue to serve, as a member of the Royal Round Table, a joint organization of the Swedish Council of America and Swedish leaders and industrialists. I attended meetings of this group, which are held in alternate years in the United States and Sweden.

I served 1970-1982 as vice president and 1982-1986 as president of the International Platform Association (IPA), an organization of platform performers, that is, public speakers. Before, during and after my presidency Helen and I usually attended the annual convention of the IPA in Washington, D.C., during the summer, where we met many outstanding personalities, such as Senator Robert C. Byrd, Harry Blackstone, Dick Cavett, Mario Cuomo, Douglas Fairbanks, Jr., Malcolm Forbes, George Gallup, Peter Grace, Jesse Jackson, James Kilpatrick, G. Gordon Liddy, Ed Meese, Claude Pepper, George Plimpton, Mark Russell, Carl Sagan, Lowell Thomas, and Governor George Wallace.

A number of annual awards, lectureships and so forth were established in my name: the Glenn T. Seaborg Actinide Award (starting date, 1984); the Glenn T. Seaborg, American Nuclear Society (1984); the Glenn T. Seaborg Medal, UCLA (1987); the Glenn T. Seaborg Research Award, Alpha Chi Sigma, UCLA (1979); the Glenn T. Seaborg Award, International Platform Association (1979); the Glenn T. Seaborg Nobel Travel Awards (two from the International Science and Engineering Fair in 1976 and one from the Swedish Council of America in 1978); also the Glenn T. Seaborg Laboratory, Kevex Corporation (established in 1985); and the Glenn T. Seaborg Center for Science and Math Teaching Excellence, Northern Michigan University (1985).

I was the author or co-author of about 100 papers published in scientific journals or books and the following books: Nuclear Milestones (1972), Transuranium Elements - Products of Modern Alchemy (1978),

Kennedy, Khrushchev and the Test Ban (1981), Nuclear Chemistry (1982), The Chemistry of the Actinide Elements, 2nd Edition (1986), Stemming the Tide: Arms Control in the Johnson Years (1987), Elements Beyond Uranium (1990).

My public speaking schedule included about 700 speeches on a wide variety of topics. Included were talks each year (1972-1990) at the Science Talent Search in Washington, talks at seven of the annual International Science and Engineering Fairs, eight commencement addresses, four science building dedicatory addresses, and talks each year since 1984 to the Nuclear Science Summer School (for high school students chosen at a national level) at San Jose State University. Celebrations observing the 25th anniversary of the discovery of elements 97 and 98 were held in January 1975, of elements 99 and 100 in January 1978, and of element 101 in March 1980.

Honors during this period included the Founder's Medal of Hebrew University (1981), Rudder Lectures at Texas A&M (3/26-28/73), French Legion of Honor (4/13/73), the Gold Medal of the American Institute of Chemists (5/18/73), Austin M. Patterson Award of the Dayton Section of the American Chemical Society (6/7/75), Bicentennial Science Lectureship of Stephen F. Austin State University in Nacodoches, Texas (9/2/75), Goosh-Stephens Lectureship of Baylor University (11/3-4/77), Francis G. Slack Lectureship of Vanderbilt University (11/30 and 12/1/77), Priestley Award of the American Chemical Society (4/2/79), J. T. Baker Nobel Laureate Lectureship of Caltech (10/24/79), Distinguished Lectureship in Materials and Society of the American Society of Metals (11/13/79), Henry DeWolf Smyth Award of the American Nuclear Society (11/17/82), Glenn T. Seaborg Medal of the American Nuclear Society (11/12/85), the Berkeley Academic Senate's Clark Kerr Award (1986), UCLA Glenn T. Seaborg Medal (10/23/87), and the Vannevar Bush Award of the National Science Board (5/11/88).

I was also elected to foreign membership in five academies of science: Royal Academy of Sciences, Sweden (1972), Deutsche Akademie der Naturforscher Leopoldina, East Germany (1973), Polish Academy of Sciences (1975), Academy of Arts and Sciences of Puerto Rico (1982), Chemical Society of Japan (1985), and Serbian Academy of Sciences and Arts (1985). This brings the total number to eleven.

I continued my membership in the Scientific Advisory Board of the Welch Foundation, attending the semiannual meetings each of the years 1972-1990. I served as Chairman of the Board of Directors of Kevex Corporation until it changed ownership in 1988.

The journal covers the activities of our children for this period. Dianne and Eric returned with us to our home in Lafayette when we moved back there from Washington in 1971. Pete moved to our home in Washington (at 3825 Harrison Street). Lynne and her husband, William B. Cobb, Dave and Steve were already in California (Steve and Dave attending the University of California at Davis).

Dianne attended Stanley Intermediate School in Lafayette and finished the ninth grade in 1973, was graduated from Acalanes High School in Lafayette in 1977, and received a B.S. in Human Development from the University of California at Davis in 1982. After living in Los Angeles for a while she has returned and is now living at home in Lafayette.



Eric was graduated from Acalanes High School in 1972 and graduated from the University of California at Davis in 1976 with a B.A. degree in Human Ecology. He moved back to Washington, D.C., in 1978.

Steve finished his undergraduate work at the University of California at Davis in 1973 with a B.A. in Psychology and then went on to obtain an M.S.W. in Social Welfare at San Diego State University. He remained in San Diego, where he married Pat Calvert in August 1986, and they are still living in La Mesa near San Diego.

Dave finished his undergraduate work at the University of California at Davis with a B.S. in Zoology in 1972 and went on to obtain an M.A. in Zoology at the University of California at Berkeley in 1974. He has been living in the Bay Area since that time.

Lynne and Bill moved back to the Midwest and East, where Lynne obtained a Ph.D. in Clinical Psychology at Purdue University in May 1979 and Bill an M.D. at Howard University (Washington, D.C.) in 1978. They moved to Iowa City in 1978, where Bill did his medical internship at the University of Iowa. Their daughter Lela Bates Cobb was born on February 15, 1981, in Iowa City. In 1983 they moved to Grand Junction, Colorado, where their second daughter Molly Seaborg Cobb was born on October 6, 1984. They are still living in Grand Junction.

Pete is still living in our Washington home. He began the operation of a used bookstore (featuring books of the Civil War era) on Connecticut Avenue, and he later moved the bookstore to Georgetown, where he is presently in business.

This brings us up to date as the volumes of Period VIII begin to be issued in 1990.

#### ACKNOWLEDGEMENTS

I wish to express my appreciation to my daughter Dianne, who helped to assemble, typed and prepared the name index for the initial volumes for this period of my journal, and to members of my office staff, Sherrill Whyte, June Jackson, Grace Nubla, Marta Munoz, Janice Ludwig, and others, who have done the same thing for those volumes after 1979.

Saturday, November 6, 1971 - Washington, D. C. - Berkeley

After saying goodbye at home to Pete and Jane, I rode to Dulles Airport with Charles Ambush, who had served as my driver since the time of my return from the Soviet Union in August. Present at the airport to see me off, to my surprise, were Marie Janinek, Ben Loeb, Howard Brown, Stan Schneider, Ed and Jeanette Brunenkant, and Cecil King. Cecil reminded me that he had been at Baltimore Friendship Airport to greet me on January 31, 1961, when I arrived to assume my AEC duties. I flew to San Francisco on TWA Flight No. 67, leaving at 9:15 a.m. and arriving at 11:40 a.m. Helen met me with our new 1972 Pontiac Station Wagon and we drove to the University of California campus to see the University of California-University of Washington football game in Memorial Stadium as the guests of Chancellor and Mrs. Albert Bowker in the Chancellor's special section of the press box. (Eric, Kem Akol, Kem's friend Craig, Lynne, Bill, and their friend Art also saw the game.) Washington won, 30-7.

After the game, Helen and I, joined for a short time by Lynne and Bill, attended a reception in the Alumni House for members of the Campanile Club. We then drove to our home in Lafayette where we had dinner with Eric and Dianne (who had spent the day at home). I spent my first night of my permanent return to California in our Lafayette home.

The Canniken shot went successfully today at Amchitka, Alaska at 2:00 p.m.

Sunday, November 7, 1971 - Lafayette

The family watched the Washington Redskins-Philadelphia Eagles football game on TV this morning. This was an interesting experience to see the Redskins, playing as usual in Kennedy Stadium in D. C., on TV in California. (Pete and Jane and two of their friends were watching the game from our usual seats in Kennedy Stadium.) The score was a tie, 7-7.

After lunch, Suki and I took a hike along Lafayette Ridge to a point overlooking Briones Reservoir and Briones Regional Park and back.

I saw the last part of the San Francisco 49ers-Minnesota Vikings football game on TV, which the 49ers won, 13-9.

I worked on putting order into some of the papers I moved from Washington. I had dinner with the family--Helen, Eric, and Dianne--a start of our routine family life in Lafayette.

Monday, November 8, 1971 - Berkeley

I worked in my office at the Lawrence Berkeley Laboratory in Building 70A.

I had lunch with the members of the Chemistry Department faculty in the O'Neill Room of the Faculty Club--the regular Monday lunch.

I spent some time after lunch with Emery Stone of Doten Pontiac, arranging for repairs on the 1966 Bonneville 4-door sedan we are buying and to get a radio-tape player put into the station wagon we bought from him.

I wrote to Norman Cousins to give him some background information on the NET-PBS controversy (copy attached).

Tuesday, November 9, 1971 - Berkeley

I worked in my Lawrence Berkeley Laboratory office.

I had a telephone conversation with Dean George Maslach at 10:30 a.m. I talked to him in response to the letter from Anthony A. Braccia of October 28, 1971, saying that I am pleased to accept the invitation to talk on Thursday evening, February 24, 1972, in connection with the National Engineering Week in Goodman Hall, Jack London Square. I said I would leave my subject open for the present, but it might be on the Peaceful Uses of Atomic Energy and I might use slides. He said that about 400 people might be present, including wives, and that I could expect a podium in the same room where dinner was served. I said I might bring Mrs. Seaborg with me.

At 10:45 a.m. I spoke with Sheldon Schwartz, Consultant to the State Legislature Joint Committee on Atomic Development and Space. He was calling as a follow-up to his call to me in Washington, D. C. I accepted his suggestion of Wednesday morning, November 17, to come to Sacramento to receive the citation that has been voted by the California State Legislature commending my services as USAEC Chairman. The presentation will probably be made by Robert Badham, Chairman of the Joint Committee on Atomic Development and Space. Mr. Schwartz will write to give me further details.

I had lunch in the lab cafeteria with Jack Hollander.

At 3:30 p.m. I spoke to Dick Frankel and I agreed to have lunch with him on Tuesday, November 16. He will pick me up at 11:00 a.m. at the Chemistry Building, LBL, and drive me over to Kevex Corporation in Burlingame. We are going to discuss the possibility of my serving as Chairman of the Board of Kevex.

I wrote to Herbert Stein, Chairman, accepting membership on the Board of Directors of the Third Century Fund of the Dreyfus Corporation.

Today I had an AM-FM radio-tape player put in our Pontiac station wagon at Berkeley Auto Radio.

I interviewed Marion de Lange for the position of my senior administrative assistant.

I took a hike with Suki to the water tank.

Eric started basketball practice.

November 8, 1971

Dr. Norman Cousins, Editor  
The Saturday Review  
350 Madison Avenue  
New York, N.Y. 10017

Dear Norman:

I am writing in response to your request for comments concerning the memorandum on the NET-PBS controversy, not to comment on this particular controversy but to give you some background information that might be useful to you.

Some time ago "The Great American Dream Machine" ran a segment on nuclear energy with Paul Jacobs as narrator, that constituted as bad a piece of yellow journalism as I have ever seen on T.V. Repeated attempts to get Al Perlmutter to place the subject matter in some kind of honest perspective were of no avail. He did make a last minute offer to allow the AEC to make a brief rebuttal statement but this would only have exacerbated the situation; the only way of rectifying the situation would have been to introduce in depth rebuttal discussions throughout the program.

I decided not to bring this matter to the attention of you, our Board, and the PBS at that time because it could be regarded as a conflict of interest situation in view of my then position as chairman of the AEC; but I have decided that now, as a matter of conscience, I should warn you that it is my personal opinion that Paul Jacobs and Al Perlmutter are not trustworthy.

Cordially yours,

GTS:fm

Glenn T. Seaborg

P.S. I shall leave it to your judgement as to whether this incident, and my opinion of the individuals involved, should be called to the attention of the National Programming Council, and any one or each of NET, the EBC Board, and PBS.

I shall not be able to attend the meeting of the Council on November 15 but expect to attend on January 20.

Wednesday, November 10, 1971 - Berkeley

I conferred with Al Ghiorso and Bob Main about the problems of financial support for the SuperHILAC building and testing program and its subsequent operation. The outlook is grim; the money for construction and testing is so tight that it jeopardizes successful completion of the project.

I had lunch in the cafeteria with Earl Hyde, after which we went down to the Bevatron area where he showed me his experiments (with Dave Bowman and Richard Eppley, whom I met) on the measurement of yields of alpha emitters throughout the Periodic Table produced by the bombardment of uranium, thorium, tantalum, etc., with protons.

I interviewed Patricia Urquhart for the position of my senior administrative assistant; she looks like the first good bet for the job.

I took a hike with Suki to the water tank.

Thursday, November 11, 1971 - Berkeley

I worked on my article for the UNESCO journal Impact of Science on Society - "Science, Culture, Universities and Government," and mailed it to the editor, Bruno Friedman.

I had lunch with Stan Thompson and Norm Edelstein in the cafeteria.

I gave a talk to the regular monthly Chemistry Department Research Conference in Room 100 Lewis Hall on "Status Report on the Transuranium Elements." The room was packed and the talk was well received.

Helen went with Dianne to a student dance at Stanley School.

Friday, November 12, 1971 - Berkeley

At 11:00 a.m., I attended the regular weekly meeting of the SuperHILAC Heavy Elements Group in the conference room of the HILAC Building. Ghiorso continued his discussion of methods for the detection of superheavy element recoils. He also suggested a reaction like  $\text{Pu}^{244}$  or  $\text{Cm}^{248}$  with  $\text{Kr}^{84}$  (of energy 30 Mev per nuclear) to produce  $\text{Ca}^{58}$  of sufficient energy to react with the target  $\text{Pu}^{244}$  or  $\text{Cm}^{248}$  to form  $114^{298}$ ,  $114^{296}$ , etc.

I had lunch in the cafeteria with Ken Hulet and Pirkko Eskola. Hulet is planning to do first experiments in the chemistry of element 104 at the SuperHILAC.

At 1:30 p.m., extending until 5:00 p.m., I attended a meeting in the conference room of Building 70A, chaired by Norman Glendenning, in which all the work on low energy nuclear physics and nuclear structure physics going on in the Lawrence Berkeley Laboratory was reviewed. Summary talks were given by Bill Myers, Ken Crowe, "Stretch" Conzett, Joe Cerny, Bernie Harvey, Frank Stephens, Kari Eskola, Stan Thompson,

Luciano Moretto, and Art Poskanzer. I have the impression that a good portion of the work is outdated and somewhat trivial and that some changes in direction are indicated; but this, of course, can only be done slowly and with great care.

I wrote Charles Robbins a reply to his letter thanking me for participating in the Annual Conference of the Atomic Industrial Forum in Miami last month (copy of correspondence attached).

Suki and I took a hike to the water tank.

Saturday, November 13, 1971 - Lafayette - Berkeley

I did some work around the house, connecting the TV aerial, etc. In the afternoon, Eric, Suki, and I took a hike up past the water tank about halfway to Briones Regional Park along Lafayette Ridge.

Helen and I attended a dinner in honor of Joel Hildebrand's 90th birthday given by the California Section of the American Chemical Society. We sat at a table with the Richard Powells. Fred Rust acted as master of ceremonies in his role of Chairman of the Section and introduced past Chairmen of the section going back more than fifty years. Lou Pollack, incoming Chairman of the Section, presided over the Hildebrand part of the program. Powell, Augustus Batchelder, and I each gave short talks about Joel. Powell spoke about the four pre-Hildebrand era Ph.D.'s; Batchelder spoke of his contributions to industry chemistry; and I spoke of my arrival in Berkeley in 1934, my exciting meeting of Hildebrand and other Chemistry faculty members, my experience with a pre-Hildebrand Chemistry faculty member, William Conger Morgan (including his famous Thanksgiving Day statement in his opening lecture), my contacts with Hildebrand during the intervening 37 years, and my hope that many of us would be here to help Joel celebrate his 100th birthday. The dinner was held at H's Lordship Restaurant at the Berkeley Marina.

Sunday, November 14, 1971 - Lafayette

I worked on my correspondence.

Lynne and Bill had lunch and dinner with us.

In the afternoon, Lynne, Bill, and Eric, with Suki and Bessie (Lynne and Bill's dog) took a hike by the water tank on up to Lafayette Ridge about halfway to Briones Regional Park.

---

1"When Professor William Conger Morgan strode into the auditorium of the Chemistry Building (room 19) at 10 a.m. this morning, he glowered at the full room of some 300 students. He finally broke his silence to announce in a stentorian voice: 'Look at the student on your right.' After we had all done this he said 'Look at the student on your left.' Then after we had all done this he bellowed 'One of you three will not be here at Thanksgiving time.'" (Journal of Glenn T. Seaborg: January 1, 1927 - August 10, 1934, pp. 132-133)



November 12, 1971

Dr. Charles Robbins  
Vice President and Executive Manager  
Atomic Industrial Forum, Inc.  
475 Park Avenue South  
New York, N.Y. 10016

Dear Charles:

Many thanks for your nice letter of November 8, 1971.



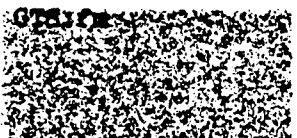
I enjoyed very much my relationship with the Atomic Industrial Forum and I look forward to it continuing at least to some extent. Certainly I shall see you all at the International Conference in Washington next November.

I am getting pretty well adjusted again to the academic community and enjoying it.

With best regards.

Cordially,

Glenn T. Seaborg



# ATOMIC INDUSTRIAL FORUM INC.

475 PARK AVENUE SOUTH · NEW YORK, N. Y. 10016 · (212) 725-8300

VICE PRESIDENT & EXECUTIVE MANAGER

November 8, 1971

523 11.2.71

Dr. Glenn T. Seaborg  
Lawrence Berkeley Laboratory  
University of California  
Berkeley, California 94720

Dear Glenn:

A two-weeks' tour of duty as a juror has frustrated my intention to express our thanks for your participation in the Annual Conference in Miami last month. The students were thrilled to have the opportunity to hear your address and to respond to their very pointed questions. And both ANS and Forum members enjoyed your journey to Russian nuclear facilities as related in your comments and slides at the luncheon meeting.

I want to again say that the entire nuclear community, and government and the public to boot, owes you a great deal of appreciation for your contribution to nuclear development, both here in the United States as well as overseas. You are a pretty sturdy fellow to have gone through these past ten years.

With an order for 500 copies of "Man and Atom" from Southern California Edison (for distribution to school libraries), some 2,000 copies of your book have been sold through our public information efforts. It may also come about that the book will be republished in other countries; at least we have suggested this to our overseas friends.

Best wishes.

Sincerely,

  
Charles Robbins

CR:esb





Helen and Glenn T. Seaborg, Mary Ellen and Richard E. Powell  
at Hildebrand birthday dinner.

Monday, November 15, 1971 - Berkeley

Kathy Parkerton from Manpower started to work with us in a temporary capacity.

I called Dave Shirley at 9:15 a.m. about the meeting of tenure faculty of the Chemistry Department on Thursday, November 18, at 3:10 p.m. to say that I won't be able to attend because the Advisory Committee of the Lawrence Hall of Science is meeting at the same time. Shirley told me that they are going to consider Bill Miller and Henry Heck for promotion to associate professor and that he will recommend promotion of Miller and termination of Heck. I told him I agreed. He said we should make a decision on Luciano Moretto next fall; he is very favorably inclined toward him.

I interviewed Sheila Saxby for the position of my senior administrative assistant; the best bet yet.

Suki and I took a hike to the water tank.

Tuesday, November 16, 1971 - Berkeley - Burlingame

At 8:30 a.m., W. O. Milligan called to give me the sad news that Dr. W. T. Doherty passed away at 4:30 a.m. this morning; this is not only a terrible personal loss, but it places the future of the Welch Foundation as a source of support for chemical research in Texas in jeopardy.

William Doerflinger called from Dutton Company in New York to tell me that the first edition of Man and Atom (6,000 copies) is about to be sold out and they are going to print another 1,500 copies; we agreed on changes to my biography in the jacket to reflect my change in status.

I met from 9:00-10:15 a.m. with Ghiorso, Main, and Isadore Perlman in my office to discuss the financial crisis in completing construction, especially the "debugging," of the SuperHILAC.

At 11:00 a.m., Dick Frankel, President of the Kevex Corporation, came by and drove me to their plant in Burlingame. I toured the plant, whose products are based on x-ray fluorescence analysis, and met their key people - Edward Woo (No. 2 man), Gary Kramer (No. 3 man), David Porter, Rolf Woldseth, and Robert Lowes. (They have just hired a controller, Quentin Koller of Lybrand, Ross and Montgomery.) I had lunch with Frankel, Woo, Porter, and Woldseth in Hugo's Bistro in the nearby Hyatt House. Frankel and I discussed the possibility of my serving as Chairman of their Board of Directors. I returned to my office, with Frankel, at about 3:30 p.m.

I wrote Samuel McManus to say I would be pleased to be the 1972 recipient of the Madison Marshall Award (copy of incoming letter attached).

At about 4:00 p.m., I called Caspar Weinberger in his office in Washington, D. C. to suggest that he visit the Radiation Laboratory following his luncheon talk to the Commonwealth Club next Friday. I also explained to him our need for \$1.7 million in the Fiscal 1973 budget for the Bevalac. I then called Durward S. Riggs, Executive Secretary of the Commonwealth Club, who invited me to sit at the head table at the Friday lunch.

Eric, Suki, and I took a hike to the water tank.

Wednesday, November 17, 1971 - Davis - Sacramento - Berkeley

I left my home in Lafayette about 8:00 a.m. and drove to Stephen's apartment at Davis, arriving about 9:15 a.m. Here I met Dave and also Stephen's friends Lois Stein and Ron Mandella. I talked with Dave about his application for graduate school--he is interested in the University of Washington, among many other places. He couldn't accompany me to Sacramento because of his class schedule. I took some pictures of Dave for use with our Christmas cards.

Steve rode with me to the Capital Building in Sacramento, where we went to Assemblyman Robert E. Badham's office, Room 5126. Here we met Badham and his assistant, Sherman Schwartz, and Senator Ralph C. Dills. Badham is Chairman and Dills is Vice Chairman of the Joint Committee on Atomic Development and Space.

Just before 11:00 a.m., we went to the hall where the State Assembly meets, and Steve, Schwartz, and I sat in the back of the room while the Assembly conducted routine legislative business. Pete Shabarum, star halfback on the 1950 Cal Rose Bowl team, came back to talk to us.

UNIVERSITY OF ALABAMA in HUNTSVILLE

THE DIVISION OF NATURAL SCIENCES  
AND MATHEMATICSP.O. Box 1247  
Huntsville, Alabama 35807

November 12, 1971

ASJ 11/15/71

Professor Glenn T. Seaborg  
Department of Chemistry  
University of California  
Berkeley, California 94720

Dear Professor Seaborg:

On behalf of the Board of Directors of the North Alabama Section of the American Chemical Society, it is my pleasure to request that you honor us by consenting to be the 1972 recipient of the Madison Marshall Award.

The Madison Marshall Award was established in 1963 by the North Alabama Section as a memorial to an outstanding member of the section. Dr. Marshall was not only active in his research with the Chemstrand Corporation, but devoted his time unselfishly to the affairs of the Section and to the advancement of chemical education in this area.

The Award consists of a certificate and an honorarium of two hundred and fifty dollars (\$250) and includes travel and subsistence expenses. The recipient is expected to present an award address, of a general nature, on some aspect of his chemical research to the Section and its guests at the time of the presentation of the award.

The award is annually awarded to an outstanding research chemist who has brought distinction to himself and his profession. The Board of Directors of the Section consider that you personify the ideals that the award represents.

Previous honorees include George B. Kistiakowski (1964), Peter Debye (1965), Carl S. Marvel (1966), Joel Hildebrand (1967), Henry Eyring (1968), Linus Pauling (1969), and Paul Bartlett (1971). There was no award in 1970.

The Section would like to announce the award early in 1972 and schedule the award dinner and presentation in the Spring. A considerable latitude exists in the schedule to allow you some freedom in arranging your visit.

We hope very sincerely that you will do us and Dr. Marshall's memory the honor of accepting the 1972 Madison Marshall Award.

Sincerely yours,

Samuel P. McManus, Councilor  
North Alabama Section  
American Chemical Society

Wednesday, November 17, 1971 (con't)

At about 11:30 a.m., Badham and Dills conducted me to the rostrum where Speaker Bob Moretti was presiding. Badham made a few remarks and then presented me with two framed copies of a California Legislature Joint Resolution (No. 10) of Commendation, directed broadly at my career and accomplishments. I responded with an expression of pleasure at being back in California; a statement that I had returned to my professorship at Berkeley, am finding budget stringencies that make things difficult for the University, a suggestion that this merited the help of the Members of the Assembly; and, finally, a brief description of the role that nuclear power is, and will be, playing in the generation of the electricity in California, throughout the United States, and in the world. My reference to the budget stringencies of the University of California and the need for help drew applause from both the Members of the Assembly and the spectators in the gallery.

After the presentation ceremony, I went to the anteroom of the Speaker's office, where I conducted a brief press conference before a number of TV cameras and tape recorders for subsequent radio broadcasts.


The main topic of questions was Canniken; I emphasized the safety of the test, its need to develop the ABM warhead, my expectation that this will be the last large yield test, my hope that we can now soon get on with a Comprehensive Test Ban Treaty, and arms limitations and complete disarmament measures. There were also questions on the safety of, and the radioactive emissions from, nuclear power reactors; in my replies I emphasized the small amount of radioactive emission compared with background radiation.

After this, Steve and I drove back to the Davis Campus to the Hammarskjold House, where I met Monti Reynolds and a number of students outside and inside of the House. A number of us went over to the dining hall, where Steve and I had lunch in the Red Room with Reynolds; Mrs. Beverly Abbott and Mrs. Patrick (Dee) Sentora, both of the housing office; Mrs. Sylvia Mednick; Miss Denise Weeks, Secretary of the House; Miss Christine Sullivan; Mr. Joseph Allen Archer; and others. I also met Stephen Kruff, a senior who is going on to law school next year. Archer will probably be the University Medalist at Davis.

After lunch, I drove back to the office in Berkeley and arrived there at about 2:45 p.m.

I wrote a short letter to Dan Tyler Moore of the International Platform Association to give him my new address and keep in touch (copy of correspondence attached).

At 3:00 p.m., I called Jack L. Ryan of Richland, Washington, in response to his letter of October 8, 1971, to indicate that a regular position is not open due to budget stringencies, but that I would like to have him come as a graduate student. He said he is undecided as to whether he wants to leave Richland, because he has strong interests in hunting and mountain climbing, but he will have to make up his mind soon. I told him that we would send him the applications for graduate




November 17, 1971

Dan Tyler Moore  
International Platform Association  
2564 Berkshire Road  
Cleveland Heights, Ohio 44106

Dear Dan:

Many thanks for your letter of November 4, 1971.

My new business address is Lawrence Radiation Laboratory, University of California, Berkeley, California 94720 and our home address is 1154 Glen Road, Lafayette, California 94541. Helen and I are getting settled in our Lafayette home, which we find needs some repairs, but not an excessive amount. After ten years absence, I am readjusting to the academic environment, I am about as busy as ever, and I am enjoying it.




Helen joins me in sending our best to you and Betty.

Cordially,

Glenn T. Seaborg

GTS:kp





school in Berkeley, and he can decide whether he wants to submit them. If he does and is accepted as a graduate student, he still has the option of declining the offer. He told me that he is 38 years old, married with no children, and that finances would not be a great obstacle. I told him that as a graduate student he would be paid about \$4,500 a year. He said that he obtained his B. S. from Oregon State University in 1963 and his M. S. in 1966, although he actually finished in 1965 and started to work in Richland then. He worked with Harry Freund on a problem of inorganic chemistry, and would prefer to continue in this field.

I talked to Tom Parsons about the future of the work Burris Cunningham had been doing. He thinks Denis McWhan would be the best replacement, with Joe Green, Jean Finger, and Joe Peterson as alternate choices.

I took a hike with Suki to the water tank.

Lynne and Bill joined us in our traditional birthday dinner for Eric--his 17th. He had a cake and received a number of presents, including an electric pencil sharpener. After dinner, Eric received a surprise birthday conference call from a number of his friends in Washington, including Scott Luria, Benny Lagueruela, Brian Sawyer, Howard Fox, and Jed Pauker, from Howard's home--they talked for about 40 minutes.

Thursday, November 18, 1971 - Berkeley

I interviewed Ann A. Taay and Sara Jane Long for the job as my senior administrative assistant.

I had lunch at a table outside the cafeteria, with Stan Thompson, Earl Hyde, Dave Shirley, Joe Cerny, Frank Stephens, Dick Diamond, and others; it was a beautiful, warm day and we had a good view of San Francisco Bay.

At 1:30 p.m., I met with Sheila Saxby in my office and formally offered her the position as my senior administrative assistant. She accepted and will start in a few weeks after serving her notice and helping to find a replacement for her present position.

I called Ron Lowder and attempted to upgrade Sheila's position to the category of administrative executive, but I met with a great deal of resistance.

At 3:30 p.m., I attended a meeting of the Lawrence Hall of Science Advisory Committee in Room 222 of the Hall. Chairman George Pimentel presided. Alan Portis, Director of the Hall, gave a status report, and said he will leave his position when his three-year term expires this summer. Reports of sub-committees were given, after which the general purposes of the Hall of Science were discussed. After the meeting, I went to a preview of an exhibit on the life and work of Ernest O. Lawrence in the Hall.

The AEC announced that the Chinese conducted an atmospheric nuclear weapons test today at 1:00 a.m. E.S.T. at Lop Nor.

Friday, November 19, 1971 - Berkeley - San Francisco

The Personnel Office approved the status of administrative executive for Sheila Saxby.

I attended the Commonwealth Club regular Friday Luncheon in the Gold Ballroom of the Sheraton-Palace Hotel in San Francisco where I heard Cap Weinberger speak on "The Second Phase of the New Economics." I sat at the head table with Weinberger; Durward S. Riggs, Executive Secretary, Commonwealth Club of California and Secretary of the Club's Luncheon Program Committee; Robert D. Raven, Attorney with Morrison, Foerster, Holloway, Clinton & Clark and President of the San Francisco Bar Association; Miss Emily G. Pike, Executive Secretary, Bechtel Corporation and Chairman of the Republican County Central Committee of San Francisco; Charles T. Travers, Vice President of Utah International Inc. and Past President of the Commonwealth Club; John B. Bates, Attorney with Pillsbury, Madison & Sutro and Member of the Club's Board of Governors; Bruce T. Mitchell, Senior Counsel, Utah International Inc. and Chairman of the Club's Executive Committee; Dr. Edmund Patrick Gaynor, Physician and President of the Commonwealth Club; Dr. Rafael A. Solari, Physician and Quarterly Chairman of the Commonwealth Club; Harley D. Oakley, Financial Consultant and Chairman of the Club's Study Section on Business Economics; James W. Halley of Halley & Cornell, Member of the Club's Luncheon Program Committee; Lieutenant Colonel Philip G. Ring, Commissioned Officer, U. S. Army; and The Honorable A. Frank Bray, Presiding Justice, Court of Appeal (Retired) and Chairman of the Club's Luncheon Program Committee.

I had hoped to have Weinberger visit the Radiation Laboratory to familiarize himself with the BEVALAC project but his schedule didn't permit it.

I called Jim Schlesinger to tell him about my discussion of the BEVALAC funding with Weinberger. Jim said the big question here is whether the Bevatron will continue to operate at all. This is basically a political question and he suggested I call Regent John Canaday who, with the help of Governor Ronald Reagan, might press the matter with Weinberger.

At the University of California Regents meeting today in San Francisco, I was awarded the title "University Professor," to be announced on Monday. The Regents also approved the appointment of Roger Batzel as Director of the Lawrence Livermore Laboratory.

Commissioner Clarence Larson dropped by and Ghiorso and I gave him a tour of the SuperHILAC project and explained to him our attempts to get funding for the BEVALAC (\$1.7 million) and for the "debugging" of the SuperHILAC (\$0.2 million).

I wrote Guyford Stever to congratulate him on his appointment as Director of the National Science Foundation.

Suki and I took a hike to the water tank.



Saturday, November 20, 1971 - Palo Alto

Helen, Eric, Dianne, Lynne and Bill (and their friend Ethel Jager), and I rode down to Palo Alto in our new station wagon. We parked at the corner of Birch Street and Park Boulevard, had a picnic lunch at a nearby park, and then went to Stanford Stadium to see the Big Game. At the game, we sat next to Karen Wagner and her fiance, Tom McQueen. Stanford won, 14-0, and put to rest the potential controversy over who is going to the Rose Bowl.

Suki and I took a hike to the water tank.

Sunday, November 21, 1971 - Lafayette

I worked on the revision of my Encyclopedia Brittanica article on the "Transuranium Elements" and, as a member of the Committee of Corresponding Consultants, on the draft manuscript "Only One Earth--the Care and Maintenance of a Small Planet." The latter is being prepared for publication prior to the convening of the United Nations Conference on the Human Environment in Stockholm next June.

I took a hike with Suki, Dianne, and Leyla Akol past the water tank on to Lafayette Ridge toward Briones Regional Park.

Monday, November 22, 1971 - Berkeley

At 9:30 a.m., Stanley Ketchum called from the University of Chicago to say that he is in charge of a two-week program (Monday, June 12 - Friday, June 23) on "Technological Change" to be sponsored by a life insurance company at a university or college in Illinois. He asked whether I would give two 50-minute talks, perhaps on Tuesday, June 20. The honorarium would be \$600. I indicated to him that my schedule was probably too busy to enable me to accept but that I would be willing to reconsider on the basis of a descriptive letter he promised to send me.

At 9:35 a.m., I spoke to Marie Janinek at the AEC office in Washington, D. C. She said that she is working in the Office of Public Information temporarily, since she has not yet been placed in a satisfactory position. She told me that my four packages of classified information were shipped last week to John O'Gara, Director of Security in the San Francisco Atomic Energy Commission Office, and should arrive this week. The other big shipment of unclassified material will perhaps leave Washington this week and then arrive at the Radiation Laboratory some 10 days to 2 weeks later.

From 10:00 a.m. to noon, I attended the meeting of the SuperHILAC Heavy Elements Group in the Conference room of the HILAC Building. I gave a talk on the chemical properties and electronic structures of the transuranium elements. Ken Hulet described experiments planned for the chemical study of element 104 and Mike Nitschke described the computer operated chemical apparatus to be used for rapid chemical work on transactinide elements.

I participated in the regular Monday luncheon of the Chemistry Department faculty in the O'Neill Room of the Faculty Club.

At 1:40 p.m., Barry Simmons of KCBS radio called to interview me on my appointment, being announced today, as University Professor.

I called John Canaday to describe to him the problem of the Bevatron's future and BEVALAC funding with the thought that he might help with Weinberger. He suggested I call Board Chairman William French Smith and President Charles Hitch with the intention of enlisting Governor Reagan's help.

I called Quentin Koller and Richard Eusslin of Lybrand, Ross and Montgomery to get their assessment of Kevex, which they gave a very high rating.

At 4:10 p.m., I spoke to Howard Vesper and described to him the proposal of the AAAS for a Corporate Associates program in which a significant number of corporations might make an annual commitment of as much as \$5,000, and asked his opinion as to whether such a program would be viable at the present time. He said he wasn't sure, but that he would make some inquiries among other Standard Oil people, including Gwinn Follis, and let me know his reaction next week. He took the occasion to invite me to a 25th Anniversary of the General Advisory Committee, to be held in Scottsdale, Arizona, with a dinner on Friday, February 25, 1972. The surviving members of the original nine-member GAC are being invited. I will receive an official invitation.

Today I mailed off to the Encyclopedia Britannica the revised manuscript of my article "Transuranium Elements."

I wrote Philip Quigg my response to the draft manuscript Only One Earth: The Care and Maintenance of a Small Planet (copy attached).

Tuesday, November 23, 1971 - Berkeley

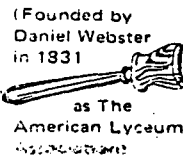
From 8:30-10:00 a.m., I was interviewed by Richard Colman, Science Editor of the Daily Cal, on my return to Berkeley, the status of nuclear power and the environmental controversy, our superheavy elements research program, the status of the University, etc.

I called Charles Hitch, President of the University of California, and explained the BEVALAC funding problem. He may call Chairman of the Regents Bill French Smith, Weinberger, and may possibly mention it in a budget session with Governor Reagan next week.

I had lunch with Hyde, Hollander, and Shirley at a table outside the cafeteria.

At 1:40 p.m., I had a telephone conversation with Jerzy Neyman of the Department of Statistics. I told him that I would write an article on my work of extending the periodic system for the NAS Copernican Volume of about 5,000 words and a number of illustrations due about March 1972. I also said I would take responsibility for a second article, "Mendeleev and the Periodic Systems of Elements," either by extending my article or finding someone else to write a second article. We agreed to get together, along with Robert Connick and possibly others, for lunch at the Faculty Club in a couple of

X Moore  
910



November 22, 1971

Mr. Philip W. Quigg  
Committee Coordinator  
World Environment Report Project  
Director of Publications  
International Institute for  
Environmental Affairs  
600 Fifth Avenue  
New York, New York 10019

Dear Mr. Quigg:

I am returning herewith the draft manuscript "ONLY ONE EARTH: The Care and Maintenance of a Small Planet." One of my colleagues and I have read the entire manuscript and each of us has pencilled our suggestions and corrections on the manuscript.

We find the manuscript on the whole to be quite well done, generally eloquent, and brilliant in spots. The author is obviously a fine and sensitive ecologist, who throughout the book clearly makes the point that ecological systems are marvelously complex and in delicate balance.

However, there are numerous mistakes, some of them serious, in the descriptive material on the development of science and technology. We have pencilled in corrections and changes based on the text as written. In order to make this part of the manuscript acceptable more than this is required; it would be necessary to do some rewriting, which our schedule does not permit us to do. I suggest that you have someone with a scientific background and writing ability undertake this task.

There are also a number of mistakes in the sections on nuclear power and its ecological effects and, again, we have pencilled in changes and corrections based on the text as written. I realize that the instructions indicate that you do not have time to analyze and absorb additional general documents such as books; however, in order to give you the option of additional material, I am sending under separate cover a copy of my recent book with William R. Corliss entitled Man and Atom to use or not, as you wish.

Nuclear Chemistry Division

-2-

November 22, 1971

I would appreciate your sending me another copy of the draft for my use, since I am returning herewith the only copy I have.

Sincerely yours,

Glenn T. Seaborg

GTS:kp

Enclosure

weeks to discuss the possibility of additional chemistry articles for the Copernican Volume.

I took a hike with Suki to the water tank.

After dinner, Helen and I talked by phone to Steve and Dave to make plans for their coming home for Thanksgiving Day.

I wrote William French Smith about the funding problems for the BEVALAC, and sent Loy Sammet an outline of my reply to Sigvard Eklund's letter of October 4 (copies attached).

Wednesday, November 24, 1971 - Berkeley

I called Gwinn Follis to get his assessment of the viability of a AAAS Corporate Associates Program; he will think about it, discuss it with Howard Vesper, and let me know his reaction.

At 10:30 a.m., John D. Porter, Personnel Director, dropped in to say that it appears to be impossible to give Sheila Saxby an Administrative Executive rating; I expressed a great degree of displeasure.

I had lunch at the Faculty Club with Jim Hart and Roger Hahn to discuss the project on the History and Records of the Radiation Laboratory. I agreed to talk to Ed McMillan about his becoming the leader of this project, possibly the Principal Investigator for an NSF grant. I did talk to him after lunch and he said he would consider it.

I talked with Perlman about operation of the Chemistry Division of the Lab.

Eric and I took a hike to the water tank.

Steve, with his friend Brent Huber, came home from Davis for Thanksgiving.

Thursday, November 25, 1971 - THANKSGIVING DAY - Davis - Lafayette

I drove to Davis to pick up Dave and bring him home for the holiday.

Eric learned that he didn't make the basketball team (13 players) at Acalanes High School.

At about 3:00 p.m., Lynne and Bill came over. We called Pete and Jane at Shirley Rubenstein's (Jane's mother) apartment in Brooklyn; we learned that Pete began to work at the Psychiatric Institute of Washington last week.

Steve and I took a hike with Suki and E. Coli (Steve's collie) by the water tank and along Lafayette Ridge.

Ben Orlove joined us all for Thanksgiving Dinner, which we had at about 5:00 p.m.

## UNIVERSITY OF CALIFORNIA

LAWRENCE RADIATION LABORATORY  
 BERKELEY, CALIFORNIA 94720  
 TELEPHONE (415) 841-2740

November 23, 1971

TELEX 115111 LAWPAADLAB BERK  
 TWX 910-366-7172 LAW RAD LAB  
 CABLE UCLRL BERKELEY

Mr. William French Smith, Chairman  
 Board of Regents  
 University of California  
 634 So. Spring Street  
 Los Angeles, California 90014

Dear Mr. Smith:

I am writing at the suggestion of President Charles Hitch and Regent John Canaday to acquaint you with a serious problem that faces the Lawrence Berkeley Laboratory and the University of California.

The problem concerns funding for a new combination accelerator which has been given the acronym Bevalac. This machine will result from connecting the Hilac (actually the Superhilac in its upgraded version) and the Bevatron.

The Hilac (acronym for Heavy Ion Linear Accelerator) has been in operation since 1957 and accelerates ions heavier than hydrogen (atomic number 1), i.e., ions such as carbon (at. no. 6), nitrogen (at. no. 7), oxygen (at. no. 8), neon (at. no. 10). With this machine the heaviest presently known transuranium elements nobelium (at. no. 102), lawrencium (at. no. 103), rutherfordium (at. no. 104), and hahnium (at. no. 105) were discovered. This machine is now being upgraded at a cost of 3.1 million dollars, funded by the U.S.A.E.C., to make it capable of accelerating any ion, i.e., ions as heavy as uranium (at. no. 92), and will again be operational within a month or two.

The Bevatron has been in operation since 1954 and accelerates protons to 6.1 billion electron volts (Bev), i.e., in the domain of "high energy physics." With this machine the anti-proton, anti-neutron, and a large number of fundamental nuclear particles have been discovered during a continuously productive lifetime of operation. Larger accelerators, such as the 30 Bev Alternating Gradient Synchrotron (AGS) at the Brookhaven National Laboratory near New York and the newly constructed, soon to operate 200 Bev Accelerator near Chicago, and others in Europe, are now in the high energy physics picture.

The Bevalac would result from connecting the Hilac, as a source of heavy ions, to the nearby Bevatron by means of a vacuum line and magnets, so that the heavy ions could be accelerated in large quantities to very high energies (higher than is possible with the Hilac alone). Such energetic heavy ions have a marvelous potential for use in the treatment of cancer, and in addition have a great potential for extremely interesting research in nuclear physics and nuclear chemistry, including the possible future discovery of superheavy elements (elements with atomic numbers like 110, 115, or 120). The Bevalac would be an extraordinary machine, unique in the entire world, and only possible at modest cost and an early time scale because of the fortunate location of both the Hilac and Bevatron at Berkeley.

The projected cost for the Bevalac is \$1.8 million - \$1.3 million for the connecting link and \$0.5 million for the "time sharing" operation required so that the Hilac can continue to operate simultaneously to possibly produce

Mr. William French Smith

-2-

November 23, 1971

superheavy elements (my personal field of interest) and as a part of the Bevalac for the cancer (and other) experiments. I believe this funding is not included in the request from the AEC, within its stringent budget setting, to the Office of Management and Budget (OMB) for the fiscal year 1973 budget, but the AEC would be happy, as I understand it, to have it added to its budget. A major reason why the Bevalac is not included, I suspect, is because a question has been raised in the OMB as to whether the Bevatron itself should be shut down after fiscal year 1973 (ending July 1, 1973) in view of the stringent budgetary situation and the larger accelerators now operating or soon to operate in the field of high energy physics.

Casper Weinberger is generally familiar with this situation, is not unsympathetic, but will need considerable urging to include the Bevalac funding in the fiscal 1973 budget. And I suspect that the OMB budget officer who has responsibility for recommending the details of the AEC budget to Weinberger has in mind recommending the shut down of the Bevatron at the end of fiscal 1973. (Weinberger has suggested that we try to get the Bevalac funding through the new, yet to be determined, cancer authority, but this is a tenuous, uncertain path not likely to yield positive results in time to help and leading to complications in the operating budget which is under the AEC).

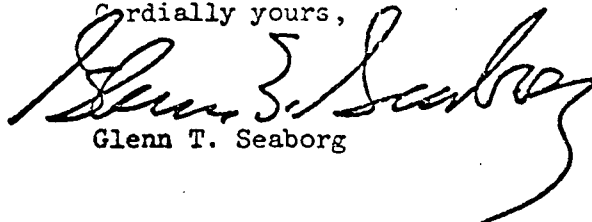
The fate of the fiscal 1973 budget will be determined within the next few weeks so early action is required.

In summary, we are faced with the problems of (1) keeping the Bevatron operating beyond fiscal 1973 and (2) funding the Bevalac (\$1.8 million) in the AEC fiscal 1973 budget to be determined within the next few weeks.

I believe that it would be a tragedy to the Lawrence Berkeley Laboratory (the place where the cyclotron originated and so many of the key nuclear discoveries were made), the University of California, and the state of California to have the Bevatron shut down. This would be a devastating blow to the Laboratory. And it would be equally tragic to lose the unique opportunities in cancer treatment, and other fields, made possible by the Bevalac.

I would be happy to discuss this with you by phone for further clarification should you wish to do so.

Cordially yours,



Glenn T. Seaborg

GTS:fm

cc: John E. Canaday  
Charles J. Hitch  
Edwin M. McMillan

3307

70A

5661

November 23, 1971

Professor Loy Sannet  
Vice Chancellor - Research  
Office of the Chancellor  
Berkeley Campus

Dear Professor Sannet:

In line with our conversation at the Lawrence Hall of Science last Thursday, I am enclosing the outline of a reply to Dr. Eklund's letter of October 4, 1971. As you can see, the situation is somewhat complicated and perhaps Eklund's suggestion would indicate that we might give the matter a little attention.

Cordially,

Olena F. Seaborg

OTS:hp

Enclosure

cc: Dean Templeton  
Director McMillan



OUTLINE OF REPLY TO DR. EKLUND

We appreciate very much your letter of October 4, 1971, expressing concern that the chemistry laboratory in Gilman Hall where plutonium was discovered be preserved for posterity.

We are fortunate that Gilman Hall still remains, even though all the other early chemistry buildings have been torn down and replaced. The Room 307 in Gilman Hall where plutonium was discovered remains in a somewhat modified form, in that it has been expanded to include a neighboring room, in order to accommodate the Chemical Engineering Program that is now centered in Gilman Hall. Thus, the room is occupied by professors and students of the Chemical Engineering Division of the Chemistry Department.

Room 307, Gilman Hall was designated by Interior Secretary Udall as a National Historic Landmark, and a commemoration ceremony in this connection was held on February 21, 1966, at the approximate date of the 25th anniversary of the discovery of plutonium. Thus, the University has taken on an obligation to preserve this historic room in its somewhat modified form. Professor Seaborg tells me that the equipment, meaning glassware and so forth, used in the experiments has continued in use throughout the intervening years and has become dispersed; hence, its identification will be difficult, but he will make an effort in this direction.

Again, let me say that we appreciate your interest, which has led us to a renewed effort and dedication toward the preservation in the future of this historic room.

Friday, November 26, 1971 - Walnut Creek

This was a Laboratory and University holiday.

I went with Eric and Steve to Pacific Stereo in Walnut Creek and bought, from John A. Hensen, the manager, a turntable, amplifier, and two large speakers. Steve and I then put it all together, including connecting our Sony tape player into the system.

Saturday, November 27, 1971 - Lafayette

I became acquainted with the intricacies of our new stereo outfit.

Vic and Nadine Schmidt dropped by.

Eric drove Steve and Dave back to Davis with me accompanying them. Eric's choice of colleges is Harvard first, Yale second, and Davis third.

Sunday, November 28, 1971 - Lafayette

I took a hike with Bob and Tom Alexander over Lafayette Ridge to Buckeye Ranch. Here we got a very hostile reception from Bob Keeney, the owner of the 4,000 acre ranch, who told us to stay off the trails henceforth. We walked back home via Spring Hill, Pleasant Hill, and Deer Hill Roads.

Monday, November 29, 1971 - Berkeley

I called John Lawrence to bring him up to date on my BEVALAC activities and on the Bancroft Library History of Science Project.

Regent Chairman William French Smith called at 11:45 a.m. to say he had received my letter of last Tuesday and is ready to help. He suggested that its contents be put in a letter to him from President Hitch, of which he would send copies to Bob Finch and Bob Haldeman. I then called President Hitch's secretary to convey the information from Regent Smith's call.

I had lunch with the Chemistry Department faculty in the O'Neill Room of the Faculty Club. After lunch, with Melvin Calvin, I visited his building (No. 3, Chemical Biodynamics), and Rooms 303 and 307 in Gilman Hall to ascertain their status.

At 4:00 p.m., Bob Rice, of the Lawrence Hall of Science, called to inquire if I would be a speaker for the meeting of a western section of the National Science Writers Association in San Diego on December 1, 1972; I asked him to have them write to give me the details.

A little later, I had an unpleasant session with Dick Connell, Laboratory Business Manager, over the job rating of Sheila Saxby.

Suki and I took a hike to the water tank.

Tuesday, November 30, 1971 - Berkeley

I attended, in the conference room of Building 70A, a session in which those doing experiments with a chemical aspect described them briefly. The speakers were Ken Street (molecular beams of alkaline earth halides), Matti Nurmi (techniques for fast chemical separation of transuranium elements), Dave Templeton (x-ray molecular structure determinations of carbon-hydrogen bonds and of inorganic compound hydrates and alkaline earth chelates), Dave Shirley (hyperfine interactions, including nuclear orientations, perturbed angular correlations, Mossbauer spectroscopy, and also photoelectron spectroscopy), Henry Schaefer (electronic structure and electron correlations by computation, including calculations on krypton difluoride), Stan Thompson (chemical identification of elements 108 to 115), Dick Diamond (ion exchange mechanisms, proton extraction and solvation, anion exchange and solvation), Andy Streitwieser (organo-metallic actinides and lanthanides), and Norm Edelstein (measurements in actinide and lanthanide organo-metallic compounds).

I had lunch in the cafeteria with the Nuclear Physics Groups of the Chemistry Division (and some other parts of the Laboratory) - a regular Tuesday noon affair.

I talked with Earl Hyde about the operation of the Chemistry division of the Laboratory.

I called President Hitch to describe my phone call from Regent William Smith yesterday. He said he is working with Regent Smith to try to help on the BEVALAC - presumably he is writing a letter less technical than mine to Regent Smith, for Smith's use with Haldeman and Finch.

I wrote to Marie Janinek in response to her note of November 22, and asked her to include some additional notes in the consignment the AEC is sending to me (copy attached).

Eric, Suki, and I took a hike to the water tank.

Wednesday, December 1, 1971 - Berkeley

Howard Vesper called to report back his reaction to my questions about the AAAS Corporate Associates plan. He has discussed this with Nelson Bogart, Vice President of Standard Oil of California. They feel that the plan should involve Industrial Membership, not Industrial (or Corporate) Associates, and that it would have hard sledding, but some large companies like DuPont, G.E., Standard Oil of New Jersey, might participate (probably not Standard Oil of California).

I talked to Dave Templeton about the organization of the Lab's Chemistry Division.

I had lunch at a table outside the cafeteria with Dave Shirley and Walt Gibson.

After lunch, I talked with Shirley about the organization of the Chemistry Division. I then visited the 88-inch cyclotron building

November 30, 1971

Marie Janinek  
 United States Atomic Energy Commission  
 Washington, D. C. 20545

Dear Marie:

I appreciate your note of November 22, 1971 (November 22--the eighth anniversary of that day!).

It is very thoughtful of you to take the responsibility for putting together the final draft for the article for the International Journal of Environmental Studies, a typical act of generosity.

Please extend to Pat an expression of my great appreciation. I shall send her immediately an autographed copy of Man and Atom.

Do you know where the notebooks are that Fritsch, Rubin and Bloom (and, possibly, Brown and Henderson) used to cover the Information Meetings? I believe these notes <sup>were</sup> also used for de-briefing the Chairman's office staff after the Information Meetings. If these can be located, I would like to have them sent out here, if they are not already with the consignment that is presumably now enroute.

As I indicated to you by phone, I <sup>have</sup> had succeeded in finding a secretary who seems to present good prospects; *she will start soon*.

I appreciate hearing from you, so don't hesitate to write.

With warm regards from Helen, Doral, and myself.

Cordially,

Glenn T. Seaborg

GTS:kp

(No. 8) where Bernie Harvey showed me the new heavy ion detection area--the machine is now devoted about 75% to heavy ion work.

I talked to Harvey and Joe Cerny about Chemistry Division organization problems.

At 3:30 p.m., James F. Miller, Grand Recorder of Alpha Chi Sigma Fraternity, dropped in to enlist my help on a fund raising program for student scholarships; I told him that I couldn't help because I am already committed to a number of fund raising efforts.

Eric, Suki, and I took a hike to the water tank.

Thursday, December 2, 1971 - Berkeley

Dave Judd called. He is now at Scripps Institute in San Diego and is interested in talking to me, when he returns to Berkeley, about his future research program.

From 10:00-11:15 a.m., I met with Al Ghiorso and Stan Thompson to discuss plans for chemical identification of superheavy elements; we will start to conduct a small seminar to discuss this program.

I had lunch at the Faculty Club with Lynne.

From 2:15-3:00 p.m., I met with Perlman and Hyde. We agreed that I would replace Perlman as Director of the Chemistry Division on January 1, 1972, with Hyde as Deputy (or Associate) Director. Perlman wants to be relieved of this responsibility and this seemed to be the best solution.

I attended the Chemistry Department Research Conference in Room 100, Lewis Hall, where Professor Bradley Moore talked on Lasers.

Helen and I attended a dinner given by President and Mrs. Hitch for Regents Professor and Mrs. Douglas Cater (San Francisco campus) at Blake House (the Hitches' home). Among those present were: Mr. and Mrs. John May (President of the San Francisco Foundation), Chancellor and Mrs. Philip Lee, Dr. and Mrs. James Born, Professor Aaron Wildavsky, Dr. and Mrs. L. D. Tuck (a Vice Chancellor on the San Francisco campus), Mr. and Mrs. Clinton C. Powell (he is one of President Hitch's aides), Mrs. Jane Conant (S. F. Examiner), Mr. and Mrs. David Perlman (S. F. Chronicle), and Mr. and Mrs. Julius R. Krevans (Dean, School of Medicine, San Francisco campus).

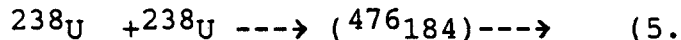
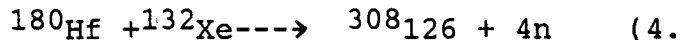
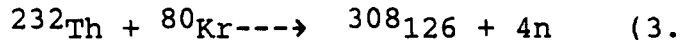
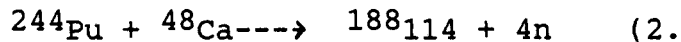
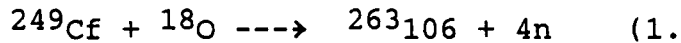
President Hitch told me he is optimistic about funding of the BEVALAC in fiscal 1973 as the result of our efforts. He spoke of my possible meeting with Governor Reagan in connection with the University's financial problems.

Friday, December 3, 1971 - Berkeley

I spoke to George L. Pappas, the Laboratory's Budget Director, about recent attempts and responses in connection with funding for the BEVALAC.

Friday, December 3, 1971 (con't)

I attended the meeting of the SuperHILAC Heavy Elements Group in the HILAC building at 10:00 a.m. Kari Eskola talked on the dynamics of nuclear reactions to produce superheavy elements. He discussed such reactions as:



	$\frac{E}{B}$	$\frac{Q}{47.6}$	$\frac{E}{X}$	$\frac{E}{\text{nuc.}}$	$\frac{V}{10 \text{ cm./sec.}}$ <sup>9</sup>
1.	105	47.6	50	0.03	0.23
2.	250	164.3	45	0.14	0.52
3.	450	299	36	0.37	0.85
4.	750	396	35	1.02	1.4
5.	1,500			1.58	1.14

Ghiorso then described some yield and detection considerations. For reaction 2, nano-barn cross section, 500 micrograms of  $^{244}\text{Pu}$  per sq. cm., 0.5 particle micro-ampere of  $^{48}\text{Ca}$  (5 mg.  $^{48}\text{Ca}$  per hour at ion source), get 3 counts per hour at detector. The product reaches the detector in SASSY (Small Angle Separation System) in one micro-second at 0.1 torr.

I had lunch in the cafeteria with Stan Thompson on this rainy day.

I called Bill Bevan at 12:45 p.m., and talked to him about a host of questions in connection with AAAS matters.

Lou Morgan, University of Texas, called at 1:00 p.m. to invite me to speak at a symposium on Nuclear Science (and its funding problems) at the APS meeting in Washington on April 28, 1972. They are also inviting people like John Connally, John Landis, and Stephen Spurr (President of the University of Texas). I regretted on the basis of my heavy schedule.

From 2:15-3:00 p.m., I was interviewed by Dave Perlman of the S. F. Chronicle on my plans and schedule at the University and my experiences as AEC Chairman in Washington. Peterson, the photographer who took the picture of me with Dianne in January 1961, was present and took a number of pictures.

I took a hike with Suki to the water tank.

Lynne and Bill came over for dinner. Eric had a Russian dinner (which he helped prepare) with his (and other) Russian classes at Acalanes High School.

Saturday, December 4, 1971 - Muir Woods - Lafayette

Helen, Eric, Dianne, her friend Julie Kleckner, Suki, and I drove to Muir Woods. Here we had lunch at the Muir Woods Inn, did some shopping for live redwood burls, seedlings, and bowls, then hiked a loop along the Ben Johnson and Dipsea Trails (some four or five miles). On the way home, Helen and I stopped at the Joel Hildebrand's for tea with Joel and Emily and Don and Millicent Cooksey. Eric drove the others home in the Bonneville, which we had parked near the Hildebrand's en route to Muir Woods.

In the evening, Eric attended a Charles Dickens Christmas Fair at Fisherman's Wharf in San Francisco; he wore my tails coat.

Sunday, December 5, 1971 - Lafayette

I watched the Washington Redskins-New York Giants football game on TV; the Redskins won, 23-7.

Eric, Suki, and I took a 2-hour hike on the hill trails (fire-break roads) around Lafayette Reservoir--a marvellous hike on trails where hiking is forbidden.

Monday, December 6, 1971 - Berkeley

Marshall Blann dropped in; he is in town lining up a program for next summer's Gordon Conference on Nuclear Chemistry.

Linda Bizell of Wolper Productions in Los Angeles called for advice on future positive applications of technology; I referred her to Chauncey Starr and Simon Ramo.

I attended the regular Monday luncheon meeting of the Department of Chemistry in the O'Neill Room of the Faculty Club.

Syd Gaarder called from Los Alamos, where he is on a safeguards trip that will bring him to Berkeley on Thursday; I'll miss him because of my trip to Washington.

Michael Hart, of the International Re-Education Foundation of San Francisco, called to invite me as one of three speakers to an International Christmas Friendship Festival at the Kabuki Theater (in Japan Town) on the evening of December 18; I regretted on the basis of my heavy schedule.

I wrote to Howard Brown to thank him for sending the pictures he took at the airport when I left Washington to return to Berkeley. I also sent Cap Weinberger a short note to thank him for his thoughts on how to get the BEVALAC funded in the fiscal 1973 budget (copy of incoming letter attached).

*Rec'd 11/29/71 17a*

THE WHITE HOUSE  
WASHINGTON

November 22, 1971

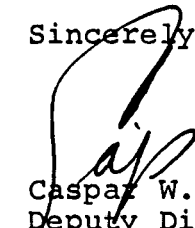
*AS 11/29/71*

Dear Glenn:

I am really sorry that I did not have an opportunity to come to Berkeley Friday, and see the BEVELAC. I had talked with several of our staff about it, and they all seemed to share the feeling, that since it had not been put into the AEC 1973 Budget submission, the best place to look for funding would be either the National Cancer Institute, or whatever comes out of the Congress with respect to the President's request for a special Cancer program. As I mentioned, I understand that there are currently some exploratory suggestions being examined that two Cancer research hospitals be transferred from the AEC to the National Cancer Institute. In any event, I will be glad to talk to Jim Schlesinger about it, and anyone at the Cancer Institute, or other agency that you think would be most helpful.

It was very good to see you again, and I certainly wish that I had a little more time. Perhaps after we complete the Budget next year, I will be able to spend some time for the things I would like.

Sincerely,



Caspar W. Weinberger  
Deputy Director  
Office of Management and Budget

Honorable Glenn T. Seaborg  
Lawrence Berkeley Laboratory  
University of California  
Berkeley, California 94720



Tuesday, December 7, 1971 - Berkeley

At 9:00 a.m., the talks on chemical aspects continued in the Building 70A Conference Room. The speakers were: John Conway (spectroscopy of actinide elements), Norm Edelstein (oxidation states of actinides in calcium fluoride), Ken Raymond (molecular structure of organo-metallic ring compounds), Maynard Michel (atomic beam chemistry and heavy ion sputtering experiments), Amos Newton (radiation chemistry with mass spectrographic and molecular beam detection), and Warren Garrison (radiation chemistry of biological systems).

I had lunch at the cafeteria with John Lawrence and Harvey White. They wanted me to take on the Directorship of the Lawrence Hall of Science on top of my busy schedule; I said this would be impossible. We decided that George Pimentel would be a good man for this job and I agreed to approach him.

At 2:00 p.m., I had a phone conversation with Bernie Feld of M.I.T. He said that he had just returned from Moscow where he had talked with M. D. Millionshchikov, Vice President of the Soviet Academy of Sciences. He said that the Soviet Academy of Sciences wants to translate my book Man and Atom into Russian. The translation will be done by Igor Pochitalin, Millionshchikov's assistant. They want to eliminate some material that is not relevant to the Russian scene. Millionshchikov wants to write an introduction and wants me to write an introduction for the Russian audience. They would let me see and check the manuscript after they have made the eliminations. I told Feld to tell Millionshchikov that I would be glad to have them go ahead as requested.

Wednesday, December 8, 1971 - Berkeley - Washington

Helen drove me to the San Francisco Airport where I caught TWA Flight No. 64 (a 747) to Baltimore Friendship Airport, leaving at about 9:30 a.m. and arriving at 5:15 p.m. (It was scheduled for Dulles, but went to Baltimore due to weather.) This was the first morning for the new "free lane" on the Bay Bridge for cars with three or more people; this led to congestion because the cars in the two right lanes from Berkeley had excess room (because of the cutoff by the center free lane) and the cars in the two left lanes were therefore excessively crowded.

Harold Fidler was on the plane, going to Washington to attend a meeting of the AEC Labor-Management Advisory Committee. He told me that we heard from the AEC yesterday that the BEVALAC is in for \$2.2 million as part of a Fiscal Year 1972 budget supplemental. I also saw and talked to Alan Nixon on the plane. The results of the election for the presidency of the American Chemical Society are in, and Alan was elected; he received 48% of the votes and his two opponents totaled 52%. He was on the way to an ACS Board of Directors' meeting in Washington.

We rode in to Washington by bus. I talked to Julius Duscha (Trustee of Science Service) on the way; his son Steve is a Berkeley campus reporter on the Berkeley Gazette and Steve's wife works for the Contra Costa Times. I rode from the Washington bus terminal to our

Harrison Street house by taxi. Here I met Jane (Pete was at work at the Washington Psychiatric Institute) and she cooked dinner for me. I met Mike, one of the two Thai boys who is rooming here.

Thursday, December 9, 1971 - Washington, D. C.

I took a taxi to AAAS headquarters (1515 Massachusetts Avenue, N.W.) to attend the meeting of the Board of Directors. Present were Mina Rees, who presided, William Golden, David Blackwell, Richard Bolt, Barry Commoner, Phyllis Parkins, Leonard Rieser, Kenneth Thimann, Philip Abelson, William Bevan, Walter Berl, Richard Trumbull, and Catherine Borrás.

Bevan started the meeting with his report, in which he said that he and Rieser will meet with Kettering Foundation officials next week to try to obtain interim financial support for the AAAS Foreign Secretariat, to be followed by an approach by Bevan, Rieser and me to John Knowles, new president of the Rockefeller Foundation, for more substantial support next summer.

Commoner requested action on increasing the membership of the AAAS (a Board resolution) and Mina appointed a committee (Bolt, chairman, Commoner, Rieser) to prepare a White Paper before the March Board meeting for discussion at the meeting, which may last through Sunday afternoon, March 12. Commoner also moved that SESPA be given a special office at the Philadelphia meeting. I moved to amend to make the room available to other unaffiliated societies as well; this lost with Thimann and me voting for it and Commoner, Rieser, Bolt, and Blackwell (and perhaps Parkins as well) voting against it. Commoner's motion then passed with only Thimann voting against; I abstained.

We had a sandwich lunch at our conference table.

Among the items discussed in the afternoon session was the draft statement of policy concerning AAAS Committee Activities and Reports; we decided to postpone this until an actual case comes up.

We discussed the question of whether AAAS should continue to appoint members to the Board of Trustees of Science Service. Golden questions whether this should be continued. The problem came to light as the result of Athelstan Spilhaus's bringing it up at the last Board meeting, at which time he indicated he would like to not be reappointed as a Science Service Trustee. Golden thought discontinuance of the relationship would make it easier for Science Service to merge with AAAS. It was decided to discuss the matter again at the time when an appointment of a Science Service Trustee by AAAS comes due, probably at the March AAAS Board meeting.

In an executive session, it was agreed that Walter Berl will leave his position as AAAS meetings director (he will be responsible for the Mexico City meeting) and Bevan will start to recruit a full-time successor immediately. (Ray Seegar is also leaving at the end of this month.)

After the meeting, I took a taxi to our Harrison Street house where I had dinner with Pete and Jane. I met their Thai tenants

"Mike" and "Tape," living in the large upstairs dormitory bedroom. Jane gave me a number of Christmas presents to carry home.

Pete had to go to work at midnight. Their friend Doug, and his Korean girl friend, arrived at about midnight (Jane met them at the train) and are spending the night here.

Friday, December 10, 1971 - Washington - New York - Lafayette

When Pete got off work in the morning, he came home around 8:30 a.m. and drove me in our old 1960 Pontiac (along with Jane and Doug) to National Airport where I caught the Eastern shuttle to New York, leaving about 10:10 a.m. and arriving about 10:50 a.m.

I took a taxi to the Biltmore Hotel. Here I went to the Bowman Room to attend the 25th (and last) Bill Knox pre-Christmas lunch. Actually, the lunch was hosted this year by F. R. Esty (Chairman, United States Banknote Corporation) and K. W. Smith (President, U.S. Banknote Corporation). Those present are listed in the luncheon program as checked (copy attached).

At the pre-lunch reception, I talked to Ted Sorenson about the prospects for the Democrats in the presidential election next year; he is not very optimistic. He said that Ted Kennedy has definitely decided not to run. I discussed with Jack McCloy our membership on the Dreyfus Third Century Fund Board, and with Joe Fitzgerald the excellent progress of his Cambridge Nuclear Corporation.

At the lunch I sat next to Shradly Hill (pastor of St. John's Church, Bill Knox's church) and Albert H. Gordon (Chairman of Kidder, Peabody and Company, and member of the Board of Overseers of Harvard University). I told Gordon that Eric has applied for admission to Harvard and he indicated he would take an interest in the progress of his evaluation procedure. As usual, a number of drawings were held; I won a silver chain bracelet and also received a 1971 Eisenhower silver dollar. After the lunch Bill Knox spoke to me about possible participation in some money-making project.

At the conclusion of the lunch, I took a taxi to Kennedy Airport where I caught TWA Flight No. 49 (a 747), leaving at 5:10 p.m. and arriving in San Francisco at 8:00 p.m. Eric met me at the airport and drove me home to Lafayette.

Saturday, December 11, 1971 - Lafayette - Berkeley

I read mail and papers that accumulated during my absence.

In the afternoon, Eric, Suki and I took a long hike in Briones Regional Park.

Helen and I went to a birthday, hosted by the Melvin Calvins, at the Durant Hotel for Joel (and Emily) Hildebrand. Among those who spoke for Joel were Ken Pitzer, Art Campbell, Bernie Alder, Gen Calvin, Don McLaughlin, Bob Scott, and John Prausnitz. Joel made a moving response.

&gt; present

## WILLIAM E. KNOX'S 25TH ANNUAL

## Guests

> Alvin P. Adams	President, The Sky Club, N. Y. C.
Robert B. Anderson	New York City
> Charles F. Barber	Chairman, American Smelting and Refining Company, N. Y. C.
> A. H. Brawner	President, Bank of America, N. Y. C.
> D. C. Burnham	Chairman, Westinghouse Electric Corporation, Pittsburgh, Pa.
> Brian P. Burns	Partner, Cushing, Cullinan, Hancock and Rother, San Francisco, Calif.
> Fletcher L. Byrom	Chairman, Koppers Company, Inc., Pittsburgh, Pa.
> A. Denys Cadman	Vice President, Gulf Oil Corporation, N.Y.C.
> Francis N. Cahn	Executive Vice President, Techint Incorporated, N. Y. C.
> Donato Cattaneo	Chairman, Societa Nebiolo, S.p.A., Torino, Italy
> Jean Cattier	Chairman, European-American Banking Corporation, N. Y. C.
> Stewart S. Cort	Chairman, Bethlehem Steel Corporation, Bethlehem, Pa.
J. L. de Cubas	President, Westinghouse Electric Europe, N. Y., N. Y. C.
> S. Donn	U. S. Representative, Fiat S.p.A., N. Y. C.
Percy J. Ebbott	New York City
> H. E. Ekblom	President, European-American Banking Corporation, N. Y. C.
> The Honorable James A. Farley	Chairman, The Coca-Cola Export Corporation, N. Y. C.
Irving Mitchell Felt	Chairman, Madison Square Garden Corporation, N. Y. C.
> Joseph J. Fitzgerald	President, Cambridge Nuclear Corporation, Billerica, Mass.
> Harlow W. Gage	Vice President, General Motors Corporation, N. Y. C.
> V. A. Garibaldi	Chairman, Fiat Motor Company, N. Y. C.
> Albert H. Gordon	Chairman, Kidder, Peabody & Co., Inc., N. Y. C.
> J. D. Haight	Vice President—Middle East & Africa Regions, Westinghouse Electric Corporation, N. Y. C.
> Charles S. Hamilton, Jr.	Retired President, Andrew W. Mellon Foundation, N. Y. C.
> Gabriel Haug	Chairman, Manufacturers Hanover Trust Company, N. Y. C.
The Honorable Hubert H. Humphrey	United States Senate, Washington, D. C.
> John D. Iversen	President, Mesta Machine Company, Pittsburgh, Pa.
> G. L. Johns	Vice President-International, Power Systems, Westinghouse Electric Corporation, N. Y. C.
> H. W. Jones	Vice President-Overseas Affairs, Westinghouse Electric Corporation, Washington, D. C.
> M. E. Kroy	President, Industry & Defense Products, Westinghouse Electric Corporation, Pittsburgh, Pa.
> J. Burke Knapp	Vice President, International Bank for Reconstruction and Development, Washington, D. C.
> The Honorable John P. Lomenzo	Secretary of the State of New York, N.Y.C.

## PRE-CHRISTMAS LUNCHEON—1971

## Guests

> John M. Lyons	Vice Chairman, Chase International Investment Corporation, N. Y. C.
Ian MacGregor	Chairman, American Metal Climax, Inc., N. Y. C.
> Howard W. McCall, Jr.	President, Chemical Bank, N. Y. C.
> A. B. McCloskey	Vice President-International, Industry & Defense Products, Westinghouse Electric Corporation, N. Y. C.
> The Honorable John J. McCloy	Partner, Milbank, Tweed, Hadley & McCloy, N. Y. C.
> John K. McKinley	President, Texaco Inc., N. Y. C.
> James F. Miller	Chairman, Executive Committee, Birth & Co., Inc., N. Y. C.
> Jerome Ottmar	President, Amtel, Inc., Providence, R. I.
Edward L. Palmer	Chairman, Executive Committee, First National City Bank, N. Y. C.
> Emil J. Patberg, Jr.	Chairman, The First Boston Corporation, N. Y. C.
> Herbert P. Patterson	President, The Chase Manhattan Bank, N. Y. C.
> Samuel F. Pryor	New York City
> William S. Renshaw	Chairman, Chemical Bank, N. Y. C.
> Roberto Rocca	President, Techint Engineering Company, Buenos Aires, Argentina
> William J. Ronan	Chairman, Metropolitan Transportation Authority, N. Y. C.
Robert Schasseur	Paris, France
P.-P. Schweitzer	Managing Director, International Monetary Fund, Washington, D. C.
> Glenn T. Seaborg	Lawrence Berkeley Laboratory, University of California, Berkeley, Calif.
> Theodore C. Sorensen	Partner, Paul, Weiss, Goldberg, Rifkind, Wharton & Garrison, N. Y. C.
Claude O. Stephens	Chairman, Texas Gulf Sulphur Company, N. Y. C.
> Whitney Stone	Chairman, Stone & Webster, Inc., N. Y. C.
> Arthur Ochs Sulzberger	President and Publisher, The New York Times, N. Y. C.
William F. Talbert	Senior Vice President, Security-Columbian Banknote Company, N. Y. C.
Austin J. Tobin	Executive Director, The Port of New York Authority, N. Y. C.
Juan T. Trippe	Honorary Chairman, Pan American World Airways, N. Y. C.
> T. Graydon Upton	Executive Vice President, Inter-American Development Bank, Washington, D. C.
> William J. vanden Heuvel	Partner, Strock & Stroock & Lavan, N. Y. C.
James M. Voss	Chairman, Caltex Petroleum Corporation, N. Y. C.
> Leslie H. Warner	Chairman & President, General Telephone & Electronics Corporation, N. Y. C.
> C. H. Weaver	President, World Regions, Westinghouse Electric Corporation, Pittsburgh, Pa.
> G. L. Wilcox	Vice Chairman, Westinghouse Electric Corporation, Pittsburgh, Pa.
> John M. Will	President & Chairman, American Export Isbrandtsen Lines, N. Y. C.
> F. Perry Wilson	Chairman, Union Carbide Corporation, N. Y. C.

Sunday, December 12, 1971 - Lafayette

I read mail and papers and watched the Oakland Raiders-Kansas City Chiefs football game on TV. Kansas City won, 16-14, thus eliminating Oakland from championship contention.

Eric, Suki and I took a hike in Briones Regional Park through Homestead Valley and along the ridge beyond.

Lynne and Bill came by for dinner.

Monday, December 13, 1971 - Berkeley

Iz Perlman told me that Director McMillan wants to make the announcement soon that I am becoming Director of the Nuclear Chemistry Division--within a week.

I had lunch at the Faculty Club at a table with Joel Hildebrand, George Stewart, Ray Sontag, Mike Koll, Dick Erickson, Robert and Wallace Brode.

A student named Neil King called at 2:00 p.m. He wanted to know if I would be teaching a freshman chemistry session next quarter. I told him that I would, and it would probably be the Monday and Wednesday afternoon session.

Perlman and I conferred with McMillan concerning the news from the AEC that funding for the BEVALAC (to the extent of \$2.2 million) is being requested in a Fiscal Year 1972 supplemental request.

I wrote Robert Kahn in reply to his inquiries about joining the International Platform Association, and Milton Eisenhower and Joseph Tydings to reply that I would be happy to be on their list as a Sponsor for the Coalition for a National Population Party. I also wrote Miriam Hollander that I would be happy to have an award named for me.

Eric, Suki and I took a hike to the water tank.

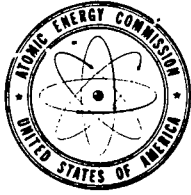
The family watched the Washington Redskins-Los Angeles Rams football game broadcast on TV from Los Angeles. The Redskins won, 38-24, which assured them of a play-off berth.

Tuesday, December 14, 1971 - Berkeley

I wrote to Marie Janinek at the AEC to thank her for her letter informing me of the changes taking place there (copy of incoming letter attached).

I called Jerry Howland at his apartment in Livermore to discuss with him whether he might want to work on the Section C-I history; he seemed interested.

I had lunch in the cafeteria with the nuclear physics group--the regular Tuesday lunch.



200 J. S. ...  
21a  
BY 12/10/71

UNITED STATES  
ATOMIC ENERGY COMMISSION  
WASHINGTON, D.C. 20545

December 8, 1971

Dear Dr. Seaborg:

Thank you for your letters of November 30 and December 2. It was good to hear from you.

Pat Norry and Cecil King are eagerly looking forward to receiving their autographed copies of MAN AND ATOM. They're both delighted.

It seems that the Information Meeting notebooks started with Dr. Fritsch. These are contained in Box 106 which, along with the other two classified material boxes (Nos. 108 and 230) left here about a couple weeks ago. Their destination was Mr. O'Gara of the San Francisco Operations Office. If you have not yet received them, you might contact him on 415/841-3641. I have also asked our Security people to check on this shipment.

The unclassified boxes were being picked up on Monday (December 6) by a trucking company. I understand that it might be something like ten days before they reach the Coast.

I have mailed the prints of your European trip to the proper people, and Cathy Maus said she would either mail the ones of your Russian trip or else give me enough information so that I could send them.

I am having a hard time dislodging the International Journal of Environmental Studies article from DiNunno's shop. They are writing and rewriting. I have inquired about it daily for the past week. Pat said they might be able to use my assistance today to put it in final form.

I know you will be interested in the big reorganization of the AEC that was announced yesterday, so I am enclosing the announcement. There are many casualties. I understand that Paul Fine and Bill Slaton are electing to retire. George Kavanagh would have been involved had he not passed away. The one causing the most comment is the removal of Howard Brown

-2-

as Assistant General Manager. I understand informally that he will be named Director of the new International Security Affairs Division, with responsibility for safeguards and the functions of the old Classification Division (Reichardt's functions), but there has been nothing official. He will report to General Giller, the new Assistant General Manager for National Security. I had heard that General Giller was to retire this coming spring, but that a one-year extension has been requested. This reorganization means a massive movement of people, furniture, telephones, etc. And, I understand that this is step 3 in a 7-point reorganization, but it certainly seems to be the largest step in the overall plan.

I'm still occupying a desk in Public Information (now called Information Services!). Evidently it was this pending reorganization that has caused Personnel to ask me to be relaxed for a few weeks - at least I hope this will help solve my situation. Howard Brown has given me a couple projects: planning for the 1976 Bicentennial, and the Executive Officers Group and Federal Executive Boards, as well as indicating that I should feel free to study the disarmament files. I don't know how his situation now affects this.

Justin called yesterday. He said that the hospital tests didn't reveal anything, but he will continue to be under his doctor's observation for a while. He said that when he sees me he'll fill me in on the reorganization situation. No doubt he's happy he found himself a berth in time. Incidentally, rumor is that Julie Rubin will end up in one of the Assistant General Manager slots as soon as he is released from his present job.

With best wishes.

Cordially,

*Marie*

Marie Janinek

Dr. Glenn T. Seaborg  
Lawrence Berkeley Laboratory  
University of California  
Berkeley, Calif. 94720

P.S. - I see that things aren't so peaceful at SLAC!

I met with Dick Frankel and Quentin Koller in my office. After a detailed discussion of the terms, I agreed to serve as Chairman of the Board of Directors of Kevex Corporation.

Eric, Suki and I took a hike to the water tank.

In the evening I attended a meeting at Happy Valley School to discuss means of raising money to purchase, for the city of Lafayette, a number of green areas in the city. Among those present were James Holliday (who acted as Chairman of the meeting), Jerry Irwin (who has drawn up a Lafayette city plan), Ernie Marriner (City Manager of Lafayette), Dr. Gordon Holmes and James Davy (members of the Lafayette City Council), Mr. and Mrs. James Moore, Mr. and Mrs. Carl Helmholtz, Mr. and Mrs. Joseph Lahey, Mr. and Mrs. John Higson, and Mrs. Mary Paige. We agreed to approach some limited number of people to seek large donations to be used for purchase of the properties and I agreed to help in approaching these people after others have worked up an overall plan.

Wednesday, December 15, 1971 - Berkeley

From 10:00 a.m. to noon, I met in the Conference Room of Building 70A with the group that is preparing a program of chemical identification of superheavy elements. Present were S. G. Thompson, A. Ghiorso, K. Hulet, M. Nurmia, J. Harris, R. Gatti, L. Moretto, and J. M. Nitschke.

Hulet described methods of Extraction Chromatography. We decided to make preparations in the fields of Extraction Chromatography and Solvent Extraction (Hulet and Nitschke), Fast Chemistry--10 millisecond to 10 sec, including gas chromatography (Hulet, Nurmia, Nitschke), Standard Chemistry (Thompson, Gatti, Moretto), Ion Exchange (Harris), Ionization Potential, In flight chemistry (Ghiorso).

The following assignments were made:

- (1) Counting equipment at HILAC (Ghiorso and Gatti) and Building 70 (Gatti and Harris);
- (2) Set-up of chemistry laboratory at HILAC (Ghiorso and Gatti) and Building 70 (Gatti);
- (3) Procurement of tracers (Gatti) and set-up of neutron counters (Thompson).

I had lunch in the cafeteria with Jack Hollander.

Sheila Saxby started to work as my secretary and administrative assistant this afternoon.

I attended a reception at the Durant Hotel given by the manager, Mr. William E. Morris.

Eric, Suki and I took a hike to the water tank. Lynne and Bill came by for dinner. They are leaving tomorrow for Nashville, Tennessee, to attend the wedding of Bill's brother Steve.



Thursday, December 16, 1971 - Berkeley

In response to his letter of December 14, I wrote Dick Frankel accepting the position as Chairman of the Board of Kevex Corporation (copy of incoming letter attached). I also wrote to Dave Packard expressing our pleasure that he is moving back to California.

I had lunch in the cafeteria with Al Zucker; he is spending two years on environmental matters with the National Academy of Sciences in Washington. When he returns to Oak Ridge next summer, he will be in charge of trying to obtain the Heavy Ion Accelerator (APACHE) for them; he discussed the status of heavy element work at Oak Ridge.

At 2:00 p.m., Indian Consul in San Francisco, Dr. S. K. Bhutani, came in to see me on a courtesy call. (I had met him at a reception at the Indian Embassy in Washington on November 5.) He expressed some concern over the cool attitude toward India at the White House level in Washington and hoped this would soon change. He said there will be a ceasefire in the hostilities between India and Pakistan tomorrow. He gave me a huge book, New India.

At 2:30 p.m., George Pappas came in to discuss a letter that Connell is sending to Paul McDaniel requesting a midyear budget adjustment of \$240,000 to take care of debugging the SuperHILAC.

Tom Jukes called at 3:15 p.m. (from the Space Sciences Laboratory) to complain about the way Robert Gillette misrepresented Norman Borlaug on DDT in the current (December 10) issue of Science; I suggested he get in touch with Phil Abelson.

Gwinn Follis called at 3:30 p.m. (in response to my inquiry of some weeks ago) to say that his discussions have led him to a discouraging view of the prospects for success of a AAAS Corporate Associates program.

Lynne and Bill left this afternoon on a 3:15 p.m. plane for Nashville to attend Steve Cobb's wedding; Helen drove them to the San Francisco airport.

Eric, Suki and I took a hike to the water tank.

Friday, December 17, 1971 - Berkeley

I attended the regular meeting of the superheavy elements group in the HILAC Building from 10:00 a.m. to noon. Wladyslaw Swiatecki described the latest theoretical considerations concerning superheavy elements. He concludes they certainly exist (at least with half lives greater than nanoseconds), but feels there is a question about the feasibility of making them. Ghiorso described the status of work on detection apparatus.

I had lunch in the cafeteria with Ghiorso, Swiatecki, Thompson, Hulet, and Diamond.

I met with Earl Hyde, Andy Sessler, and Jack Hollander to discuss future plans for environmental research at the Lawrence Berkeley

December 14, 1971

Dr. Glenn T. Seaborg  
University Professor of Chemistry  
University of California  
Lawrence Berkeley Laboratory  
Berkeley, California 94720

Dear Glenn:

After considering the content of our letters and conversations subsequent to my letter of August 4, 1971, I am very pleased to offer you the following proposal:

1. Dr. Glenn T. Seaborg becomes the Chairman of the Board of Kevex Corporation.
2. Kevex Corporation issues to Dr. Seaborg 3,000 shares of Kevex Corporation common stock at a price of \$11.04 per share (\$33,120.00). Dr. Seaborg issues a note for \$33,120.00 to Kevex Corporation bearing 6% interest per annum. The note will be payable in full within nine years from the date of issuance.
3. Kevex Corporation will engage Dr. Seaborg as a consultant and, in turn, remunerate him at a rate of \$212.50 per hour for the first forty hours of consulting work in any calendar year. For hours in excess of forty hours, Dr. Seaborg will receive \$25.00 per hour in any calendar year. Kevex will guarantee, regardless of hours of consulting work performed, to pay Dr. Seaborg a minimum of \$8,500 annually for ten years.
4. Dr. Seaborg will apply an amount of \$5,000 annually toward the note outstanding to Kevex in accordance with the attached schedule.

I look forward to the opportunity of working with you. I sincerely believe that Kevex will be confronted with both great challenges and opportunities in the future.

Sincerely yours,

Richard S. Frankel  
President

RSF:ma  
Enclosure

DATE	ACTIVITY DESCRIPTION	PRINCIPAL	INTEREST	TOTAL	INCOME	INTEREST EXPENSE	NET INCOME	TAXES (50%)	CASH RECEIVED	CASH FLOW
12-31-76	Purchase 3000 shares at 11.01 per share	33,030 -		33,030 -						
1-31-77	Put of 500 @ 30.12 P, 11.11% I	<5000 >	<1187 >	<5000 >						
2-28-77	Interest earned @ 13.10% x 2%		1887 -	1887 -						
3-31-77	Put at 29.12	30,100 -	-	30,100 -	3,500 -	1,987 -	6,513 -	3,256.50 -	3,500 -	243.50
4-30-77	Interest earned @ 10.07% x 1/2%		1106 -	1106 -						
5-31-77	Put of 500 @ 30.11 P, 11.06% I	<5114 >	<1306 >	<5000 >						
6-30-77	Put at 29.12	24,915 -	-	24,915 -	3,500 -	1,806 -	6,694 -	3341 -	3,500 -	153 -
7-31-77	Interest earned @ 24.12% x 1/2%		1615 -	1615 -						
8-31-77	Put of 500 @ 33.57 P, 10.5% I	<5355 >	<1615 >	<5000 >						
9-30-77	Put at 31.14	23,523 -	-	23,523 -	3,500 -	1,615 -	6,885 -	3,412.50 -	3,500 -	57.8
10-31-77	Interest earned @ 23.58% x 1/2%		1412 -	1412 -						
11-30-77	Put of 500 @ 35.88 P, 11.1% I	<5588 >	<1412 >	<5000 >						
12-31-77	Put at 31.12	19,940 -	-	19,940 -	3,500 -	1,412 -	7,088 -	3,544 -	3,500 -	<14 >
1-31-78	Interest earned @ 11.40% x 1/2%		1146 -	1146 -						
2-28-78	Put of 500 @ 33.01 P, 11.1% I	<3301 >	<1176 >	<3000 >						
3-31-78	Put at 31.12	16,156 -	-	16,156 -	3,500 -	1,196 -	7,304 -	3,672 -	3,500 -	<151 >
4-30-78	Interest earned @ 11.12% x 1/2%		968 -	968 -						
5-31-78	Put of 500 @ 40.52 P, 11.2% I	<4052 >	<968 >	<5000 >						
6-30-78	Put at 31.12	12,104 -	-	12,104 -	3,500 -	968 -	7,532 -	3,766 -	3,500 -	<266 >
7-31-78	Interest earned @ 11.01% x 1/2%		726 -	726 -						
8-31-78	Put of 500 @ 41.24 P, 11.6% I	<4124 >	<726 >	<5000 >						
9-30-78	Put at 31.12	1330 -	-	1330 -	3,500 -	726 -	7,774 -	3,887 -	3,500 -	<387 >
10-31-78	Interest earned @ 11.32% x 1/2%		410 -	410 -						
11-30-78	Put of 500 @ 45.50 P, 11.6% I	<4550 >	<410 >	<5000 >						
12-31-78	Put at 31.12	3,500 -	-	3,500 -	3,500 -	470 -	8,030 -	4,015 -	3,500 -	<115 >
1-31-79	Interest earned @ 6% x 3/20%		118 -	118 -						
2-28-79	Put of 418 @ 33.00 P, 11.1% I	<3300 >	<311 >	<3000 >						
3-31-79	Put at 31.12	-	-	-	3,500 -	198 -	3,302 -	4,151 -	5,000 -	158 -
4-30-79	Interest earned @ 6% x 3/20%		103.78 -	103.78 -	3,500 -	103.78 -	3,396.22 -			230 -
5-31-79	Put at 31.12	66,127 -	-	66,127 -	66,127 -		66,127 -	33,063.50 -	20,000 -	<45 >

Laboratory and in the Nuclear Chemistry Division in particular. We may create an environmental group within the Division and possibly an Environmental Division within the Laboratory. The main problem will be to get funding and I may go to work on this.

I attended a Christmas reception in the Barrows Room of Barrows Hall; Sheila Saxby was a guest of honor in recognition of her departure from the Department of Political Science to come to work for me.

The second and final large consignment of my papers from Washington arrived this week.

I took a hike to the water tank with Suki.

Saturday, December 18, 1971 - Lafayette - Davis - Lafayette

I rode with Eric to Davis to pick up Dave and bring him home for the Christmas holidays. We met his friends Leigh West, Denise Weeks, Steve Pappe, and Warren (a blind boy). We put Dave's things in the station wagon and then drove by Steve's apartment to pick up E. Coli to bring him back with us. Steve is moving into a new apartment (Apt. C at Campus Fair II, 515 East 8th Street--across the hall from his present Apt., A), so he will not come home for another day or two. We returned to Lafayette at about 1:00 p.m.

After lunch, Dianne, Eric, Dave, and I drove to a Christmas Tree Farm near the Briones Reservoir and bought a tree that we cut down ourselves. After we had brought the tree home, Eric, Dave, Suki, E. Coli, and I took a hike in Briones Regional Park along the trail that goes through Homestead Valley, to the end of the road and back.

Sunday, December 19, 1971 - Lafayette

Eric picked up Lynne at the San Francisco airport upon her return from Nashville. They joined Helen, Dianne and me at the Pacific School of Religion in Berkeley where we all attended the wedding of Karen Wagner and Thomas McQueen III in the Chapel of the Great Commission at 2:30 p.m. After the wedding, we attended the reception at the Alumni House on the University of California campus hosted by the wedding couple, Mr. and Mrs. Frederick Wagner (Karen's parents), and Mr. and Mrs. McQueen (Tom's parents).

Eric and I took a hike in Briones Regional Park with Suki, E. Coli and Bessie (Lynne and Bill's dog). We hiked on the trail (road) that leads to the overnight shelters.

Lynne had dinner with us; Bill is in Moline, Illinois visiting his mother on his way back from Nashville.

Dave had dinner at the Beaumonts'--their son, Gary, is his friend from grammar school.

Monday, December 20, 1971 - Berkeley

I had lunch with Lynne in the upper level cafeteria of the Student Union, after which she helped me shop for a Christmas present

for Helen; I bought a blouse at I. Magnin and Lynne will buy Irving Stone's and Herman Wouk's latest books.

Steve arrived home from Davis for the holidays; he rode with friends. Dave drove to Davis and back in the afternoon to confer with a friend.

Eric, Suki and I took a hike to the water tank. Lynne again joined us for dinner.

I sent the manuscript of my paper, "Energy and Environment," to the International Journal of Environment Studies.

Tuesday, December 21, 1971 - Livermore - Berkeley

I drove to the Lawrence Livermore Laboratory, where I first met with Walter Nervik, Dick Hoff and Ken Hulet in Nervik's office in the Radiochemistry Building, then went to the main auditorium building. Here I was introduced by Roger Batzel and gave a talk, illustrated with slides, "Status Report on the Transuranium Elements," to a packed room. The talk was followed by questions.

After my talk, we went to Peter Stevenson's office in the Radiochemistry Building, where Stevenson described his mass spectrometer for identifying fission products.

I had lunch with Roger Batzel in the Director's office on the fifth floor of the Administration Building; Duane Sewell joined us during the latter part of the lunch.

After lunch I met with Ken Hulet and his group (Mel Coops, James Evans, John Wild, Hugh Wilson, and Ron Loughed) in Nervik's office (with Nervik and Hoff present). Hulet described his apparatus for gas chromatographic identification of superheavy elements. Wild finds a half-life of 100.5 days for Fm-257 (S.F.) and an  $\alpha$ /SF ratio of 475 +/- 2%.

I then went to Building 119 (basement area), where I met John Johnston (Livermore Lab archivist), Dick Daley (of San Francisco AEC office security group), and a Livermore Lab security man. I reviewed the material sent from Washington that is being stored there (copy #2 of my journal and some secret papers) and early Met-Lab and Radiation Laboratory (including Latimer) papers.

I then drove to the Lawrence Berkeley Laboratory, arriving about 3:45 p.m., and spent the rest of the day there.

Wednesday, December 22, 1971 - Berkeley

Howard Brown called at 9:30 a.m. to discuss the position he has been offered--President of the Electro-Nucleonics Biological Laboratories in Bethesda. After hearing all the inducements of salary, etc., I agreed with him that he should accept the offer.

I had lunch in my office.

After lunch, I attended a surprise party for Frank Asaro (in connection with the awarding of his 20-year service pin) in the Conference Room of Building 70.

At about 2:30 p.m., I attended the annual Christmas party in the HILAC Building. Ghiorso acted as host and Master of Ceremonies. He called on Bob Main and others connected with the building of the SuperHILAC to give short talks. He also called on me and I gave a short talk recalling my relationship with Ghiorso over the years, commending members of the group for their accomplishments and expressing optimism concerning probable discovery of superheavy elements when the SuperHILAC starts to operate.

I took a hike with Dave and Suki to the water tank.

Thursday, December 23, 1971 - Berkeley

I worked at the office with Sheila and Doral Buchholz (our office manager) getting papers and material sent from Washington in order. I had lunch in my office.

Dave, Suki and I took a hike to the water tank.

Eric had his wisdom teeth pulled this morning. My sister Jeanette and her husband, Ray Edwards, arrived at our home in the middle of the afternoon. They, as well as Lynne, had dinner with us. Lynne met Bill at the San Francisco airport upon his delayed return from his trip to Nashville and Moline; he and his mother and step-father had car trouble on the drive from Nashville to Moline.

Friday, December 24, 1971 - Lafayette

Members of the family went shopping at various times during the day. After lunch I took a hike with Dave and Suki on the paved path around the Lafayette Reservoir.

Lynne and Bill came over around 5:00 p.m. We all had a traditional family Christmas Eve dinner--Helen and I, Eric, Dianne, Dave, Steve, Jeanette and Ray, and Lynne and Bill. Near the end of the meal, Dianne did her pantomime act. We then opened our Christmas presents in the living room--our first Christmas at our Lafayette home since 1960. I took movies and recorded on my Sony cassette recorder.

Saturday, December 25, 1971 (Christmas Day) - Lafayette

We had our traditional Christmas dinner at 1:00 p.m. Again those present were Helen and me, Dianne, Eric, Steve, Dave, Lynne, Bill, Jeanette, and Ray. The stockings were filled during the night by Helen and found by all under the tree this morning.

Suki and I took a hike to the water tank and beyond at about noon; Jeanette, Suki and I took the same hike in the afternoon.

I saw the Dallas Cowboys beat the Minnesota Vikings, 20-12, and the Miami Dolphins beat the Kansas City Chiefs, 27-24, in a second overtime period--semifinal playoff games on TV.

The same crowd had supper. At about 10:30 p.m., Bill's mother and stepfather called from Moline to wish us a Merry Christmas (after Lynne and Bill had gone home).

Sunday, December 26, 1971 - Lafayette

I went to Pacific Stereo in Walnut Creek with Steve and Eric to buy an Ampex Tape Recorder.

In the afternoon, Steve and Eric drove to Davis--Steve transported our old Hoffman TV and met a friend. Jeanette and Ray had dinner with Ray's son Keith and his family in Pinole.

Dave, Suki and I took a hike to the water tank.

Monday, December 27, 1971 - Lafayette

Jeanette and Ray ended their stay with us and started back, in their camper-truck, to their Long Beach home at about 11:00 a.m. this morning.

I worked on the foreword for the report on our August Soviet trip and on my article "Nuclear Energy and the Environment" for a special April 1972 issue of the IAEA Bulletin.

Suki and I took a hike around the Reservoir this afternoon.

Tuesday, December 28, 1971 - Lafayette

At home.

Wednesday, December 29, 1971 - Lafayette

I worked further on my article, "Nuclear Energy and the Environment." In the afternoon, I went in to the University to pick up my mail, with Bill and Eric accompanying me. Then we visited our land in Orinda and found it badly eroded as the result of its use by horses of Tres Mesas stables. I told the partner owner, Robert Armijo, to vacate our land.

Bill and Lynne had dinner with us.

At about 9:45 p.m., Chet O'Konski called to invite me to speak to the Lafayette Democratic Club; I regretted on the basis of a heavy schedule but suggested the members come and hear me when I speak to the Lafayette chapter of the American Association of University Women on February 25.

Thursday, December 30, 1971 - Lafayette

I worked on my article, "Nuclear Energy and the Environment," and drove in to the University to pick up my mail. Steve, Dave and Eric built a cage for the snakes in our shed. Bill, Lynne, Bessie, Suki, and I took a hike in Briones Regional Park; we hiked in a loop over the ridges, going through Homestead Valley on the way there and back. Lynne and Bill had dinner with us.

Friday, December 31, 1971 - Lafayette

Helen, Dianne, her friend Julie, Suki, E. Coli, and I rode to the Muir picnic area of Mt. Diablo, had a picnic lunch, then hiked to the top. It was a cold blustery day and the mountain was covered with snow.

Lynne and Bill came by in the evening and stayed until 11:30 p.m., then went home to Piedmont to see the New Year in. Dave went to a party in San Francisco. Helen, Steve, Eric, Dianne, Julie, and I saw the New Year in at home. As usual, we watched the TV broadcast from Times Square with Guy Lombardo and his orchestra.

Saturday, January 1, 1972 - Lafayette

We watched the Rose Bowl Game on TV, which Stanford won, 13-12, over University of Michigan in a very exciting finish. We also watched the Orange Bowl Game, which Nebraska won, 38-6, over Alabama. Bill and Lynne were with us.

Bill, Eric and I planted a sycamore tree in our patio and a sequoia tree on the bank at the rear end of our lot.

Sunday, January 2, 1972 - Lafayette

I watched on TV the National Football Conference championship game from Irving, Texas. The Dallas Cowboys defeated the San Francisco 49ers, 14-3. I also watched part of the American Football Conference championship game which the Miami Dolphins won, 21-0, over the Baltimore Colts.

Bill, Lynne and I visited our Orinda land and hiked over essentially the entire periphery of it; the lower part, filled with trees and other vegetation and containing two springs, is beautiful. I talked to Robert Armijo, President of Rancho Tres Mesas, about their trespassing on our land and again asked them to get the horses off the land. He claims that his partner, Sam Trull, Vice President of Rancho Tres Mesas, is the culprit and refuses to vacate the premises. We may have to institute eviction procedures of some kind.

Eric drove Steve back to Davis so he can start the Winter Quarter.

Monday, January 3, 1972 - Berkeley

I called Al Ruffo to thank him for the tickets to the San Francisco 49ers-Washington Redskins semi-final playoff game (December 26, 1971) and to discuss purchase of 1972 season tickets to the 49ers games.

I talked with Earl Hyde about the organization of a Division of Nuclear Chemistry Program Committee, and a number of other Councils, and set plans for the notification of the Program Committee members and for the first meeting of the Committee.

I had lunch in my office.



Rolf Mehlhorn, a recent postdoctorate student of Burriss Cunningham, dropped in to investigate the possibility of working with me on the calculation of the electronic structure of heavy elements, using the method of Parametric Potential. At present, he is working with Alan Keith of the Department of Genetics but this will soon terminate.

Eric, Suki and I took a hike to the water tank.

Tuesday, January 4, 1972 - Berkeley

Waldeana Green from Western Girl started to work with us in the office.

Bill Yeomans called me from Washington at 10:45 a.m. He had heard about Barbara Ward's article, "Only One Earth: The Care and Maintenance of a Small Planet," which is being written for publication in advance of the U.N. Conference on the Environment to be held in Stockholm in June. He had heard that this was very anti-nuclear power. I told him that I was a member of a large group of consultants who had reviewed the article, and that I had sent in voluminous corrections in an attempt to place the article in a better perspective.

John Rasmussen called from Yale at 11:55 a.m. He said that Robert Epple and Alexander Van Dyken will be visiting the Radiation Laboratory on Wednesday and Thursday, February 2 and 3, to review Leo Brewer's program. They will be willing to stay over to attend a meeting at 1:30 p.m. on February 4 in my office to discuss the matter of funding for a resident representative of the HILAC Users Group in the Laboratory. Also attending the meeting will be the available members of the HILAC Users Group--John, Richard Diamond, John Huizinga, John Unik, Albert Ghiorso, Earl Hyde, and me.

I had lunch in the cafeteria with the nuclear physics group.

Helen drove Dave back to Davis for the Winter Quarter. Eric, Suki and I took a hike to the water tank.

I wrote Herman Pollack in connection with his Bureau of International Scientific and Technological Affairs survey of pending and emerging policy issues in science and technology (copy attached).

Wednesday, January 5, 1972 - Berkeley

Maynard Michel and Tetsuo Hadeishi dropped in at 11:15 a.m. to tell me that they have been offered some financial support (about \$30,000) from the Office of Naval Research for their mass separator program; they will check with Earl Hyde to make the arrangements.

I had lunch in the cafeteria with Stan Thompson and Dave Shirley.

Harris Ward, Chairman of the Board of Commonwealth Edison in Chicago, called me at 2:00 p.m. He said that they have put together, on the basis of my speeches and writings, a question-and-answer format in defense of nuclear power for publication in their annual report, along with my picture. I asked him why he didn't have my successor as

January 4, 1972

Mr. Herman Pollack, Director  
Bureau of International Scientific  
and Technological Affairs  
Department of State  
Washington, D. C. 20520

Dear Herm:

This is in reply to your letter of December 23, 1971. I am not sure that I understand what you have in mind, but will make a few suggestions anyway.

One international issue, or technological problem that needs to be solved, is that of the disposal of high-level radioactive wastes from nuclear power plants. Related to this, many small countries will need repositories for such wastes but do not have the space that will be required, and hence will need to use depositories in other countries.

Another issue is the international inventory of environmental radioactivity levels from nuclear power operations throughout the world. I suggested the need for such a system in my talk in New York to the U.I. Symposium on Environmental Aspects of Nuclear Power Stations on August 10, 1970.

Another problem, of course, is that of the scientific and technological aspects of developing efficient and non-intrusive Safeguards for the implementation of the Nonproliferation Treaty.

Another general problem is to develop the scientific and technological background required for the implementation of arms limitation and disarmament measures.

Of course there is the problem of ecology and environmental protection and restoration on an international scale, but I imagine that many of your respondents will identify this. There are many related problems, such as oceanography and so forth.

Herman Pollack

- 2 -

January 4, 1972

Helen and I and the kids are well settled in the world of academia by now, and enjoying it.

Best regards,

Cordially,

Glenn T. Seaborg

GTS/sms

Chairman of the Atomic Energy Commission do this. He said that, frankly, he isn't technically capable of responding to such questions and is inclined to let the nuclear industry take care of itself while he takes care of his responsibilities. I said that it could be embarrassing for me to be carrying out this aspect of the new Chairman's responsibilities but that I would look at the material, which he will send me immediately; then I will give him my answer.

Roger Scott of ABC-TV in Los Angeles called to ask if he could come up to film my first chemistry class next Monday. I said that I didn't think it would be appropriate. He then asked if they could do a filmed interview with me. I said that I would rather not; he appeared to accept that.

I took a hike to the water tank.

Thursday, January 6, 1972 - Berkeley

I met in the morning with Earl Hyde and Jack Hollander to begin to make plans for an Environmental Chemistry group within the Nuclear Chemistry Division.

I had lunch with Stan Thompson, Earl Hyde and Jack Hollander in the cafeteria.

After lunch I took a hike with Stan on the road and trail to Tightwad Hill, then on the trail into Strawberry Canyon and down to Centennial Drive and Stadium Rimway and back up the hill to our starting point at Building 70A.

I dropped in on Perlman in his laboratory and he showed me his Mossbauer work on determining iron in Israeli clays.

Ray Colvig called me from the Public Information Office on the campus at 3:10 p.m. He was following up the request of the Los Angeles ABC-TV station to film my first class on January 10. I told him that my instinctive feeling is that I should not get involved in a great deal of national publicity, and he concurred that, even at best, television is usually fairly disruptive. I agreed, however, to his photographer's taking some stills from the back of the classroom for pictures that would be distributed to the wire services.

Rolf Mehlhorn dropped in at 4:30 p.m. to discuss further his prospects for working with me on electronic structures of heavy elements. I told him that the chances of getting support are not very good, but he should confer with Earl Hyde.

Oliver, our boa constrictor, got seriously hurt during an escape from the new snake cage.

At 7:00 p.m., Helen and I attended a dinner given by Chancellor and Mrs. Albert Bowker at University House. Present were the Charles Hitches, the Earl "Bud" Cheits, the Gus Knechts (Dean Witter and Co.), the Ray Bacchettis (of Stanford), the Gerald Liebermans (Stanford), Garff Wilson, Madeline Russell, Fred Terman, and Mrs. Bowker (the Chancellor's mother).

At the dinner table I sat next to Mrs. Bowker and Mrs. Cheit. I had a rather extended conversation with Mrs. Cheit concerning my experiences in Washington, including discussion of the Vietnam war. President Hitch and I discussed our apparently successful attempts to obtain funding for the BEVALAC, and I emphasized that Congressional approval must still be obtained for the supplemental which includes this item.

Friday, January 7, 1972 - Berkeley

I attended the regular weekly meeting of the SuperHILAC group at 11:00 a.m. in the HILAC Building. Bob Main gave a report on the status of the SuperHILAC. Beams of heavy ions (up to xenon) using the smaller ion source may be available early in February. Swiatecki gave a talk describing the picture if S.F. half-lives are cut by a factor of  $10^{10}$ . He concludes that about 5 Mev per nucleon is adequate for  $\text{Ge}^{76} + \text{Th}^{232}$ . Nitschke described beam dynamics and timing considerations, followed by similar considerations by Ghiorso.

The Program Committee of the Nuclear Chemistry Division held its first bag-lunch meeting in my office. All members were present: Joseph Cerny, Richard Diamond, Norman Edelstein, Albert Ghiorso, Norman Glendenning, Bernard Harvey, Jack Hollander, Earl Hyde, Isadore Perlman, Arthur Poskanzer, David Shirley, Kenneth Street, David Templeton, Stanley Thompson, and me. We conducted a general discussion of problems to be covered in the bi-weekly meetings that will follow and reviewed our procedures. The committee will meet hereafter at 12:00 noon.

I conferred with Hyde about Mehlhorn; Hyde had met with him yesterday and agreed that, through Sumner Davis of the Physics Department, he might apply for a grant to work with us on electronic structure of the heavy elements.

Eric and I took a hike to the water tank. (Suki has had a sore foot the last couple of days.) Dianne stayed home from school today with a cold. Helen has been suffering from one all week.

Saturday, January 8, 1972 - Lafayette

At home.

Sunday, January 9, 1972 - Lafayette

I read freshman chemistry material and watched the Milwaukee Bucks-Los Angeles Lakers basketball game on TV--Milwaukee won, 120-104.

In the afternoon, I visited our Orinda land and found that they are still running horses over it, despite Mr. Trull's promises to stop. I talked to Mr. Armijo and Mr. Young (Trull's son-in-law) and they seemed sympathetic to my request.

Monday, January 10, 1972 - Berkeley

I sent William Yeomans the draft of my piece on the death of

Vikram A. Sarabhai with the request that he make any needed corrections or additions (copy attached).

I had lunch with the Chemistry Department faculty in the Howard Room of the Faculty Club.

At 1:00 p.m., I taught my first chemistry class in thirty years in Room M of Section 2 of Chemistry 1B. I talked about the ionization of water, weak acids, and weak bases, and about hydrolysis. It seemed to go fairly well. Dennis Galloway took some pictures for the University Public Information Office for use by the media if they request. My teaching assistant is John Wasilczyk. I will teach two sections: room M on Mondays; room A on Wednesdays (schedule attached).

At 3:30 p.m. I went over the five-year budget projections (due in Washington AEC soon) for the Nuclear Chemistry Division with Ken Street. These contain generous, but we believe needed, increases for the HILAC and 88-inch cyclotron.

I took a hike with Eric and Suki to the water tank. Dianne was still home from school with her cold today. Joe Johnson started refinishing the wooden floors in our home today.

Tuesday, January 11, 1972 - Berkeley

At 9:45 a.m., I called J. Harris Ward in Chicago to question the appropriateness of my doing the written "interview" for Commonwealth Edison--particularly in light of James Schlesinger's press statement today that industry should take care of itself. He responded that I am simply telling the truth about things that are not related to what Schlesinger is talking about. He thinks that Schlesinger would like me to do this. He said he would contact Schlesinger, and I will await word of the conversation before proceeding.

James W. Cobble called me from Purdue at 10:55 a.m. He wants to nominate Al Ghiorso for the Fermi Award. I thought that perhaps he should wait until after Ghiorso has had a shot at the superheavy elements, but he doesn't think it would hurt to proceed now. He regards Ghiorso's contributions as comparable with those of Norris Bradbury and John Wheeler. We agreed that it would be better to have the nomination come from a source other than Berkeley, though I will ask Earl Hyde to send him supplementary material. Jim noted that he will be here for the Users meeting on February 3-4.

Steve Swatt of KCRA-TV in Sacramento called me at 11:15 a.m. to ask if he could do a filmed interview about my return to academia. I declined.

I had lunch with the Nuclear Physics group in the cafeteria.

After lunch, Ghiorso and I took a circular hike on the road above Stern Hall up the hill past the Big C and back down to the South Gate and so to our starting point at Building 70A.

At 2:00 p.m. I attended a meeting of the Superheavy Elements Chemistry group. Jack Clarkson (of the Livermore Lab) talked on

D R A F TVikram A. Sarabhai

With the unexpected death of Dr. Vikram A. Sarabhai on December 30, 1971, India lost a strong guiding hand for its nuclear energy and space research programs. In addition, international science --and especially the worldwide nuclear community--lost a tremendously effective leader who had served it well for a number of years.

Dr. Sarabhai assumed his duties at the time of the tragic death of Dr. Homi Bhabha in an airplane accident in 1966. Thus, India has suffered the loss of two brilliant national and international leaders in the field of nuclear energy within the space of just a few years. Both had an especially close relationship with the national leadership of India and a determinative influence on national policy in this field. Dr. Sarabhai had just recently outlined for Prime Minister Indira Gandhi a projected ambitious ten-year program in nuclear energy and space which had been accepted as national policy.

Dr. Sarabhai was recognized as a leader in the international community of nuclear energy. He was a source of strength in the International Atomic Energy Agency during a period when this Agency was steadily assuming a position of tremendous importance to the maintenance of peace in the world. I first met him at the 10th General Conference of the IAEA in September 1966 and also had the opportunity to see him in action at the following five annual General Conferences of the IAEA held in Vienna each year. As a measure of the esteem in which he was held, he served as President of the 14th General Conference in 1970.

Vikram A. Sarabhai

D R A F T

2

A visit to India in January 1967 gave me an opportunity to observe first-hand the great impact of his leadership and personality in his homeland. Here we met with Sarabhai and his colleagues at the headquarters of the Indian Atomic Energy Commission to discuss and arrange specific expanded areas of the collaboration between the Commissions of India and the United States. During this visit we also visited the Tarapur Nuclear Power Station, then under construction, and attended the dedication of the national Trombay Laboratory as the "Bhabha Atomic Research Center." Here Dr. Sarabhai joined Prime Minister Gandhi in an eloquent tribute to Homi Bhabha and to the role of science, and nuclear energy in particular, in the development of India.

During our visit to India, Helen and I also had the pleasure of meeting Mrinalini (Mrs. Vikram Sarabhai), a remarkable woman of striking beauty who is a classical dancer of international reputation. We also had the opportunity to become acquainted with other members of this remarkable family, Vikram's mother and sister.

Warmth, friendliness, and an outstanding sense of humor augmented his manifest intelligence and articulateness. His many and wide travels made him friends throughout the world and served to keep him informed on scientific matters to an almost unique extent.

Vikram Sarabhai was a genuine internationalist. He spoke not only for India but for developing countries as a whole. He was a strong advocate of nuclear power, but at the same time he warned of the concomitant dangers of nuclear weapons proliferation. His insistent



Vikram A. Sarabhai

D R A F T

3

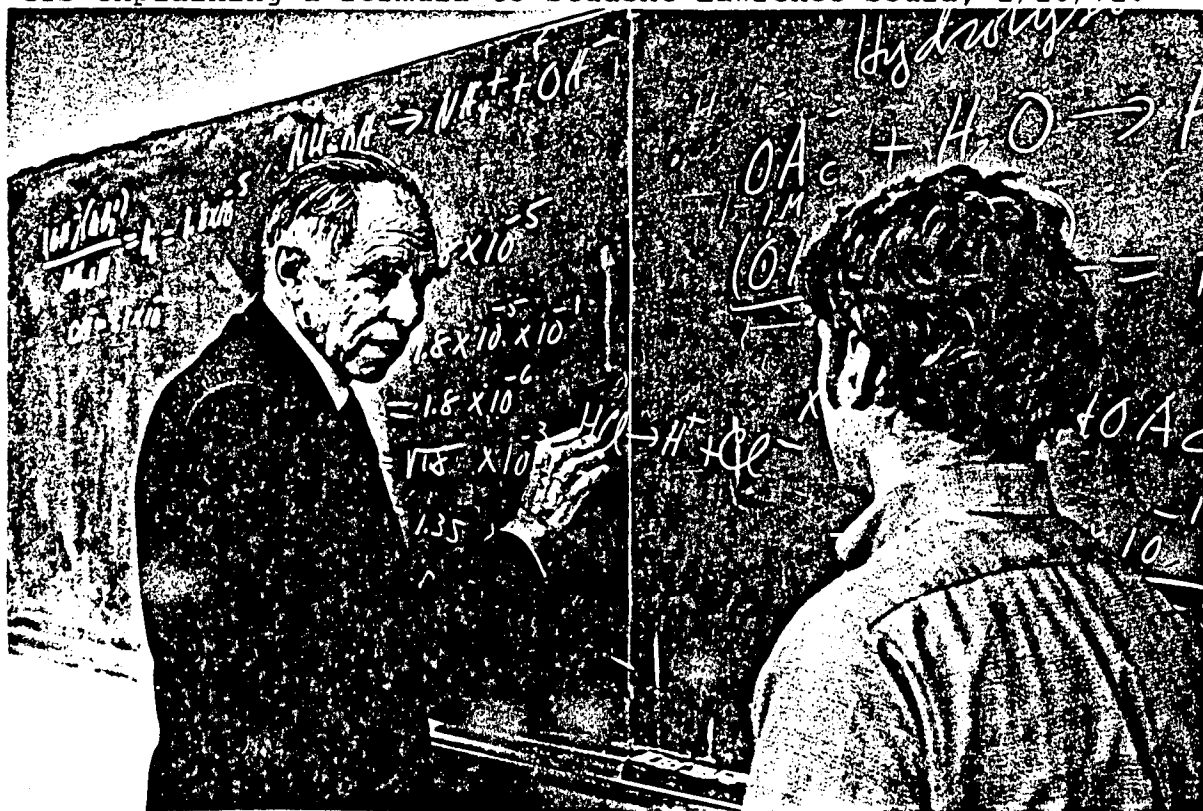
voice reminded the representatives of nuclear weapons states that these countries had a responsibility to move toward nuclear arms limitation and disarmament if they expected to stop the proliferation of nuclear weapons by placing limitations on additional countries. He was respected by all and representatives of nuclear weapons and non-nuclear weapons countries alike turned to him for advice and help when areas of agreement were difficult to find. His wise counsel and effective conciliatory contributions will be sorely missed.

Glenn T. Seaborg



GTS with teaching assistant Larry Bernstein, 1/10/72.

GTS explaining a formula to student Lawrence Souza, 1/10/72.



WINTER, 1972CHEMISTRY 1B LAB SCHEDULEProf. S. S. MarkowitzREVERSIBLE REACTIONS, CHEMICAL EQUILIBRIUM, KINETICS

<u>Experiment</u>	<u>Periods</u>	<u>Points</u>	<u>Secs. 1,2(MW)</u>	<u>Secs. 3 &amp; 4(TuTh)</u>
9 Weak Acids	2	10	Jan. 10, <sup>12</sup> <del>11</del>	Jan. <sup>11</sup> <del>12</del> ,13
10 Salts of Wk Acids	1	-	17	18
11 pK (UNK) Wk Acid	2	40	19,24	20,25
12 Hydrolysis	1	-	26	27
"14" AgCl Titration;K	2	30	31, Feb. 2	Feb. 1,3
8 Thermochemistry; $\Delta H$	2	20	Feb. 7,9	8,10
16 Effect of T on K; Borax $K_{sp}$	2	20	14,16	15,17
"16A" $[\text{Co}(\text{en})_2\text{Cl}_2]\text{Cl}$ synthesis & Kinetics	4	30	23,28 Mar. 1,6	22,24 29, Mar. 2
15 Oxid-Redn; $E^\circ$ , Cells	2	20	8,13	Mar. 7,9
Review & Makeup sess'n			-	14
Review & Checkout. (Post-cards to T.A.)	1		15	16
	<u>19</u>	<u>170</u>		

Instruction Starts: Monday, Jan. 10, 1972.

Washington's Birthday Holiday: Monday, Feb. 21.

Instruction Ends: Saturday, March 18.

Final Exam: Group 14; Friday, March 24, 1:05 - 4:30 pm.

1. All lab assignments (including calculations & problems) are due at the start of the first lab period following completion of the expt.

2. Record primary data (weights, buret markings, temperatures, times, etc) directly into your notebook: no scraps of paper, looseleaf, or spiral. A bound notebook with numbered pages is required. A simple slide-rule is required. Records should be kept in ink.

3. Labs are two two-hour sessions following two 45-min discussion periods per week. Do not hesitate to ask questions. All lab work must be completed in your regularly-scheduled period. Exceptions for compelling reasons (such as illness) must be approved by your T.A.

TEXTS: Pimentel & Spratley, "Understanding Chemistry".

Latimer & Powell, "A Lab Course in General Chemistry".

Butler & Grosser, "Relevant Problems for Chemical Principles".

See you in class,

*Samuel S. Markowitz*

chromatography, Ken Hulet on anion ion exchange separations, and Matti Nurmia on the use of silver chloride in gas chromatography.

Bob Sommer (younger brother of Bill, Pete's schoolmate in Lafayette) dropped in to see me; he credited me with starting his interest in physics--he is an executive officer for the Department of Physics at Davis.

I conferred with Hyde and Hollander about the makeup of our new Environmental Chemistry group.

Dan Wilkes called me at 3:30 p.m. A reporter had told him that scientists at Argonne have discovered  $\text{Np}^{237}$  and  $\text{U}^{236}$  in moon samples. Asked for a comment, I said that this was a very significant discovery because it is so different from the situation on earth, thus indicating some nuclear synthesis processes on the moon.

Dick Frankel and Rolf Woldseth called me from the Kevex Corporation office in Burlingame at 4:00 p.m. They told me that they have perfected a method of determining the level of ingested lead in the blood to the extent of 0.5 ppm using only 2-3 cc. They are preparing a proposal for financial support to the State Air Resources Board for the development of this process and have an M.D. as a consultant. They have also found that they can determine the level of lead in human hair, using only a small snip. I agreed to act as a Senior Reviewer for their proposal, which they will send me soon.

Eric, Suki and I took a hike to the water tank.

Wednesday, January 12, 1972 - Berkeley

I had lunch in my office while conferring with Sheila on office matters.

At 1:00 p.m., I taught my first session of my other chemistry 1B section in Room A (Bernstein is my teaching assistant). I again talked on ionization of water, weak acids and bases, etc. It seemed to go well. A young student Newsweek reporter was present during the first part of my lecture.

I talked with Frederick Seitz, President of Rockefeller University in New York, at 2:45 p.m., by phone. I asked him if he would approach the Research Corporation on behalf of Science Service's funding needs (\$25,000 per annum for three years for salary increases). He advised attaching it to a larger program that we would be doing anyway, then using the money for the increases. He said that much will depend on Spike Coles, President of the Research Corporation--Coles is bothered by the political orientation creeping into Science News and thinks it has lost its link with the students.

Earl Hyde and I met at 4:00 p.m. with a group who will constitute the start of our Environmental Chemistry group--Jack Hollander, Bob Giauque, Amos Newton, Aldo Sciamanna, John Conway, Ralph McLaughlin, George Shalimoff, Matti Nurmia, and Maynard Michel--to discuss plans for getting a research program under way.

On the way home I stopped at our Orinda land and put up a three-strand barbed wire barrier at the upper horse entrance and a chain and lock at the lower entrance. I asked Armijo and Steve Young to tell Sam Trull to get the pile of steel beams off our land.

Thursday, January 13, 1972 - Berkeley

Dianne started back to school.

I called Ted Sherburne at Science Service in Washington at 8:55 a.m. to report on my conversation with Fred Seitz. Ted said there will be substantial difference of opinion on the Board about the political "activity" in Science News, and recounted several enthusiastic responses that had come to him. We discussed other matters to be raised at the January 21st meeting.

At 10:30 a.m., Harris Ward called me from Chicago to report his conversation with Schlesinger who said he would be delighted if I would do the question-and-answer piece, and that he wouldn't need to read it before publication. I told Harris I would return the corrected copy today, which I did.

At 11:35 a.m. I called Stanley Schneider to arrange our getting together when I am in Washington next week. He had seen the article about my return to teaching in the Times, the Star and the Post--he will send the clippings. We discussed the status of Nuclear Milestones Volume II. He said it was nearly ready to go to press when it was stopped "for budgetary reasons" (though Stan thinks the reasons were political, having to do with policy about promotional activity). He will send me the Van Dykes and try to track down the picture negatives, with an eye to our publishing it elsewhere.

I had lunch in my office.

At 2:15 p.m., I recorded on tape a statement in connection with the 25th anniversary of the Voice of America broadcasts to the Soviet Union. It was taped by William Hillman of USIS, who was brought to my office by Jeff Garberson of the Laboratory's Public Information office.

At 3:30 p.m., Helen and I attended the memorial service for William F. Shepard in the Great Hall of the Faculty Club. Frank Kidner acted as moderator. He introduced three friends of Bill's who spoke of his life and work. Gerald Marsh represented his teachers; Bill Davis spoke as a contemporary; and George Link represented his students.

After the ceremony, Helen and I had the opportunity to speak to a great number of our friends, including Kidner, Marsh, Davis, and Link. Link, who was student body president during my last semester as Chancellor in the Fall of 1960, is now President-Elect of the UC Berkeley Alumni Association. He said he may call on me in that capacity to help in connection with the campus's current athletic problems; he thinks that perhaps if I talk to Walter Byers it might help. We also talked to Joanne Theobald, who was an elected student representative to the ASUC, and to Jane Semple, who worked on the

Daily Californian during the Fall of 1960 (these were their maiden names; I didn't inquire as to their marital statuses). These three told me that Dave Armor, the radical student body president during 1959-60, is now a conservative professor at Harvard. And Dan Silver, the radical Daily Californian editor in the Fall of 1960, is now a more-or-less conservative lawyer in Belgium. Joanne said that they had had a very interesting reunion of the Class of 1961 which Bill Shepard attended. Jane said that in her talk at that occasion, she made some comments about me as their Chancellor and said she will send me a copy. They all agreed that at the next reunion--perhaps the 15th in 1976--I, as their Chancellor, would be invited.

Eric, Suki and I took a hike to the water tank. Eric went to the home of Tom Camp, a Yale alumnus, in the evening for an interview in connection with his application for admission to Yale.

Friday, January 14, 1972 - Berkeley

Paul Fields called me from Argonne at 9:30 a.m. He said that they have found  $U^{236}$  in Apollo 12 and Apollo 14 (not in Apollo 11) moon rocks, to the extent of 200 ppb of  $U^{236}$  compared with  $U^{235}$ . They also have found  $10^{-13}$  g of  $Np^{237}$  per gram of moon rock. They are not sure how they are produced, but it may be proton reactions. However, the present known proton flux is 50 times too small. The neutron flux is also too small.

I attended the meeting of the Superheavy Elements group in the HILAC Building at 10:45 a.m. We told the group that we have received approval for Increment VI to the HILAC Building (\$250,000 total project cost) to be completed in October of this year. Ghiorso discussed ideas for a booster to be added to the HILAC (possibly fiscal year 1975 project) to increase energy to 50 Mev per nucleon, making it possible to produce ions such as  $Ca^{58}$  for use as projectiles. I reported on the discoveries of the Argonne scientists. Kari Eskola reported on his calculations of the energy of heavy element recoils produced by heavy ion collisions.

The Program Committee of the Nuclear Chemistry Division held its regular lunch meeting in my office from 12:00-1:00 p.m., with everyone in attendance. We continued a general discussion of our plans for the immediate future, covering the Summer Undergraduate Program, equipment, the Environmental Chemistry Research program, and the Presidential Internship Program.

I called Walter Orr Roberts at Boulder at 2:40 p.m. as a follow-up to Ted Sherburne's material on the Max C. Fleishman Foundation and the possibility of our getting funds for Science Service. He recommended that we do it in a very straightforward way; sending a letter to Julius Bergen noting the times and circumstances of prior requests, our history since then, and renew the request.

At 4:00 p.m., I called Buford Price in the Physics Department on the campus to learn the status of hunting for superheavy elements in cosmic rays through the use of emulsion techniques. He said that there is no clear-cut evidence that any transuranium element has been

found. He hopes to get on Skylab with large areas of detectors for a long time to increase the sensitivity, but he hasn't succeeded yet.

The AEC announced today the arrangement with TVA and Commonwealth Edison for building the first fast breeder prototype power reactor.

Saturday, January 15, 1972 - Lafayette

Eric, Dianne, her friend Cherie Alexander, and I visited our land in Orinda and found that the horses are finally off--a consequence of my putting on the lock and barbed wire on Wednesday. We visited Aldvitan, whose house is below our property. He told us that the water pipe from the spring on our property goes down to the de Laveaga's old home at 56 Camino del Orinda and was used to fill his swimming pool. We drove by to see his house and empty pool.

In the afternoon, Lynne, Bill, Eric, Bessie, Suki, and I took a hike in Briones Regional Park after Bill and I had planted two rose bushes, Christmas presents from Lynne and Bill, in our front yard.

Sunday, January 16, 1972 - Lafayette

I watched the Super Bowl on TV--the Dallas Cowboys beat the Miami Dolphins, 24-3. Eric, Suki and I took a hike in Briones.

Monday, January 17, 1972 - Berkeley

I held my first of regular Monday student office hours from 11:00 a.m. to noon in my campus office, Room 446, Latimer Hall.

I went to the regular Monday luncheon of Chemistry Department faculty in the Howard Room of the Faculty Club.

At 1:00 p.m., I taught my Chemistry 1B section in Room M, Latimer Hall.

Eric, Suki and I took a hike to the water tank.

Tuesday, January 18, 1972 - Lafayette - New York

Helen drove me to the San Francisco airport where I caught TWA Flight 800 (a 747) to New York Kennedy airport, leaving at 9:30 a.m. and arriving at 5:30 p.m. I rode into New York (Grand Central Station) in the airport bus and checked into the Chemists' Club. I had dinner in the dining room and took a walk down Broadway afterward.

Wednesday, January 19, 1972 - New York

I walked to the General Motors Building, 767 Fifth Avenue, and went up to the 35th floor, the headquarters of the Dreyfus Corporation. Here I had breakfast with David W. Burke, Jerome S. Hardy, David Bronheim, Michael A. Glass, and an attorney from a consulting firm. I also met Margaret Evans, the secretary who arranges the meetings. We discussed the general processes by which firms, in which investors' funds will be invested in the Dreyfus Third Century Fund, will be chosen so as to meet the criterion "improving the quality of

Wednesday, January 19, 1972 (con't)

life in America as this nation approaches the Third Century of its existence." This criterion seems to be met by firms with best growth potential. A big issue, which may reach the Board of Directors for resolution, is whether the rating of such firms will be made public.

After the breakfast, Burke took me on a tour of the premises and gave me a packet of papers.

I had lunch in the dining room of the Chemists' Club. I sat at the "Low Brow" table with Mr. Newberg, Sam Teague (an officer or prospective president of the Club), Daniel B. Curll, Jr. (a vice president of Day and Zimmermann Consulting Services), Paul B. Slawter, Jr. (Executive Secretary of the American Institute of Chemists), and others. Slawter requested a copy of my picture with a student (as recently published in The New York Times), together with a suitable caption and identification of the student, for publication in The Chemist. Mr. and Mrs. Curll are leaving for Japan next Tuesday and may call for an appointment to see me when he returns through Berkeley early in June.

After lunch I visited the library in the Club. I met Simone Spoerri, Club librarian, who thanked me for my gift of Man and Atom to the library and showed me around it. I also met Sidney B. Tuwiner, chairman of this year's symposium to be held at the Club on April 28, to which I was invited but regretted.

At 4:00 p.m., I attended a meeting of the Board of Trustees of the Educational Broadcasting Corporation in the Carnegie Endowment Building, 345 East 46th Street. Present were Mrs. Joan Ganz Cooney, Walker G. Buckner, John S. Crowley, James Day, Gustav S. Eysell, Kenneth C. Foster, Ethan A. Hitchcock, Mrs. Kenneth A. Ives, Raymond Johnson, Devereux C. Josephs, Orin Lehman, Robert B. Meyner, Crocker Nevin, John D. Rockefeller III, Mrs. William Schuman, Charles G. Stradella, Ward B. Chamberlin, Jr., John J. Iselin (Vice President and General Manager of WNET/13), Curtis C. Messinger, William Kobin, and Hudson G. Stoddard.

Ethan Allen Hitchcock presided and went through the printed agenda. This was followed by showing of excerpts from WNET/13 and NET programming. Peter Adler, director of the opera "Mary Lincoln," of which an excerpt was shown, spoke about the problems involved in producing and finding funds for such programs.

My impression of the meeting is that the chairman moved it along with little chance for discussion, or, perhaps, the Board is not inclined to question his moves. I learned afterward, in conversations with William Kobin and Jim Day, that they are very unhappy with the dropping of the name NET, which was one of the actions taken by default because of no discussion as the result of the chairman's recommendation.

After the meeting, we went up to the Terrace Room on the top floor for cocktails; the planned dinner was not held, apparently because of indicated small attendance.



Just before dinner, I called Sheila for a status report on my home office. I dined in the auxiliary dining room of the Chemists' Club. Here I met Norman F. Estrin, who identified himself as one of the high school chemistry teachers to whom I presented awards on behalf of the Chemists' Club on the occasion when I was given honorary membership in the Club about 10 years ago; he has since obtained his Ph.D. and is now a cosmetic chemist.

Thursday, January 20, 1972 - New York - Washington

I had breakfast in the auxiliary dining room of the Chemists' Club. After, I walked in the general neighborhood of the Club and bought some old records at the King Karol record store on 42nd Street between 6th and 7th Avenues.

I checked out of the Chemists' Club and took a cab to 777 United Nations Plaza. Here I attended a reception on the ninth floor and a lunch on the second floor at the National Programming Council for Public Television. I sat between Robert Chollar (President and Chairman of the Board of the Charles F. Kettering Foundation of Dayton, Ohio, and originally a chemist) and Edward N. Ney (President and Chief Executive Officer of Young and Rubicam, Inc.).

After lunch, Norman Cousins presided over a meeting of the Council. James Day, James A. Perkins and Ethan Allen Hitchcock made short reports on the status of public television and the need for funds. The group approved a motion that it support an updating of the Carnegie report on public television. James L. Loper (KCET, Los Angeles), Lloyd Kaiser (WQED, Pittsburgh), Donald V. Taverner (WETA, Washington), William J. McCarter (WTTW, Chicago), James Karayn (National Public Affairs Center for Television), Richard O. Moore (KQED, San Francisco), and Joan Mack (NET) gave short reports of progress in their respective areas. Peter Herman Adler (NET Opera Theater) spoke passionately about the need to support opera and music in television and radio. Curtis W. Davis (NET) spoke on cultural programming in public television. Gerald Slater (Public Broadcasting Service) mentioned some of his problems.

Leonard Marks was appointed chairman of a committee to look into the future of public broadcasting. Also present at the meeting were: Mrs. Allan E. Charles, Alexandra Cincotta, Sy Gomberg, Hazel Henderson, William H. Kobin, Herman Long, and Stephanie Mills.

After the meeting, I took a cab to LaGuardia airport and caught the second section of the 4:00 p.m. shuttle to Washington National airport, leaving at 4:40 p.m. and arriving at 5:40 p.m.

I took a taxi to the State Department, where I attended a reception in the Diplomatic Functions Area on the 8th floor for Bill McElroy (who is departing to become the Chancellor at the University of California at San Diego next week) and Guy Stever (incoming Director of the National Science Foundation). Among those I talked with were the McElroys, Stevers, Clarence Larsons, Bill Doubs, Bill Johnsons, James Rameys, Don Rices, James Wakelins, Roger Heyns, Jim Webbs, Harry Fingers, Phil Abelsons, Philip Handlers, Milton Harris, as well as Jim Schlesinger, Paul Gross, George Kistiakowsky, Gerald

Tape, Clancy Ohlke, Congressman George Miller, Herm Pollack, Lloyd Cooke, Dick Garwin, Allen Astin, Clarence Linder, Eric Walker, and Lynn Beedle (Roger Hildebrand's brother-in-law).

Heyns spoke to me about taking on some assignments in connection with the American Council on Education which he now heads; I suggested he wait a while, but he will get in touch when something interesting turns up. In my conversation with Schlesinger, I mentioned our new Environment Chemistry group and our pleasure that the BEVALAC is in the fiscal 1973 AEC budget which seems to be a fairly good one. I told Finger that we might be able to do some work for him in connection with his Department of Transportation's research program; he may pay us a visit. Ohlke told me he has offered Stan Schneider a job with NSF, to work for Stever and their magazine Mosaic, and he has accepted. Ramey told me he thinks the recent AEC reorganization is only cosmetic.

I rode with Mr. and Mrs. Phil Abelson in their car to our Harrison Street house. I told him about the difficulties I am having in getting Man and Atom reviewed. He thinks that Bevan will try to get AAAS Board support to stop disruptions at the annual meetings.

I had dinner with Pete and Jane. After, they opened the belated Christmas presents that I had brought and also went through the other items I brought, such as Pete's photographic material.

Friday, January 21, 1972 - Washington

I had breakfast at our Harrison Street house.

At 11:00 a.m., Betsy McFadden came by and we reviewed progress on and made plans for my book Travels in the New World, based on my foreign travel journals, the project upon which she is helping me.

I had lunch with Jane at the house.

From 4:00-6:30 p.m., I presided over a meeting of the Board of Trustees of Science Service at their headquarters, 1719 N Street, N.W. Present were: Allen V. Astin, Wallace R. Brode, Bowen C. Dees, Julius Duscha, Milton Harris, O. W. Riegel, Edward W. Scripps II, Gerald Tape, John Troan, Edward G. Sherburne, Jr., Kendrick Frazier, and Donald Harless.

The meeting followed the agenda (copy attached). We decided to raise the subscription price of Science News from \$7.50 to \$9.50. We reaffirmed our desire to continue our affiliation with AAAS and our confidence in the three representatives of AAAS on the Board (Brode, Dees and Spilhaus).

After the meeting, Tape drove me home where I had dinner with Pete and Jane. I packed a number of things to take home in my two suitcases.

Helen, Eric, Lynne, Bill, Steve, and Dave had dinner with Bill Puppa at the Nut Tree. Bill spent a few days at our Lafayette home on his way back to Korea.

## AGENDA

## MEETING OF THE BOARD OF TRUSTEES OF SCIENCE SERVICE

Friday, January 21, 1972, 4:00 p.m.

Director's Office, Science Service, 1719 N St., N.W., Washington, D.C.

1. Approval of Minutes of October 22, 1971 Board Meeting.
2. Financial Report (based on figures from December Monthly Report which will just be completed).
3. Report of Financial Advisory Committee.
4. National Science Foundation Grant Status.
5. Salaries.
6. Report of Science Youth Activities Advisory Committee.
7. Report of Science News Advisory Committee.
8. New Business.
9. Next Meeting of Board.
10. Executive Session.

Note: Kendrick Frazier, Managing Editor of Science News and Donald Harless, Business Manager, have been invited to attend, as requested by the Board at its last meeting.

ES

Enclosures

Saturday, January 22, 1972 - Washington - Lafayette

I had breakfast at our Harrison Street house. Pete, Jane and I were joined by Stan and Renee Schneider for some after breakfast coffee. Stan brought me the galley of the second section of Nuclear Milestones, which I shall arrange to have published because the AEC has made a policy decision not to publish it. He and I discussed his impending decision to leave the AEC and join the NSF.

Stan and Renee drove me to Baltimore Friendship airport where I caught TWA Flight No. 227, leaving at 12:10 p.m. and arriving at San Francisco airport at 2:50 p.m. Helen, along with Dianne, met me and drove me home. I took a hike with Eric and Suki in Briones Regional Park; we hiked in the rain on the road through Homestead Valley and back.

Sunday, January 23, 1972 - Lafayette

I spent a good part of the day reading the mail and papers that had accumulated during my trip east. Lynne, Bill, Eric, Suki, Bessie, and I took a hike in Briones Regional Park along the southern border through thick underbrush in places, ending up in Homestead Valley.

Monday, January 24, 1972 - Berkeley

I called Myron Kratzer in Washington in response to his letter of January 10 (copy attached). He intends to go to one or more industrial concerns for funding; he mentioned Science Service as being the group that might sponsor his idea of science fairs in South America. I indicated that I would be willing to participate but that he must realize that raising funds is a very difficult proposition. I also said that my time is somewhat limited for such activities. I agreed that Science Service would be the proper group and that I would send a copy of his letter to Ted Sherburne. He will pursue this further when he returns to Buenos Aires and will get in touch with me, possibly with a view of my sending a letter to industrial concerns seeking financial support.

From 11:00 a.m. to noon I held my regular office hour in Room 446 Latimer Hall. A student (Greg Stein) dropped in for help. I had lunch with the Department of Chemistry faculty in the Howard Room of the Faculty Club. After lunch, at 1:10 p.m., I taught my Chemistry 1B section in Room M Latimer. I came up on the hill to my office in Building 70A at about 2:30 p.m.

I received a call at 2:45 p.m. from a Dr. T. P. Koh, a Chinese biologist who is interested in developing a science curriculum improvement project with an emphasis on Chinese language areas. He told me that he got his Ph.D. in Germany, has been professor, chairman and dean in universities in mainland China and Taiwan. I asked him to send me some material that I could read and suggested that he see me during my office hour at Latimer Hall.

I conferred with Earl Hyde. We decided, for budgetary reasons, to cut back in the Health Chemistry Services on off hours and to put the Hot Laboratory on a standby basis.



EMBASSY OF THE  
UNITED STATES OF AMERICA

Myron B. Kratzer 40a  
Buenos Aires  
Department of State  
Washington, DC 20521

Buenos Aires, January 10, 1972

*Recd 1/19/72*

PERSONAL

Dr. Glenn T. Seaborg  
Professor of Chemistry  
University of California  
Berkeley, California 94720

*ASD 1/22/72*

Dear Dr. Seaborg:

Since this is the first occasion I have had to write since my transfer to the Department of State and your own departure from the Commission, I should like to say again, as I did at the time of my departure, how much I appreciated the strong support which you so consistently gave the international program, and to me personally. The ten years which I spent under your leadership in this activity have been the most rewarding of my professional life to date, and I shall always be deeply grateful for your key role in my having had this opportunity.

To turn to the specific purpose of my letter, you will recall my expressing to you, in Geneva, the hope that you would continue to associate yourself with international scientific cooperation, and, specifically, that you would find it possible to visit Argentina some time in the future. You understandably asked what purpose such a visit might serve, and I have since given a great deal of thought to your question. As a result, an idea has begun to take shape in my mind which I believe could, if implemented, be of considerable value to Argentina and similar countries, and to our relations with them. Of even more importance, I believe the program could succeed only through the personal efforts of someone of your stature and background.

The idea that I have in mind is to extend to countries such as Argentina - that is, to countries at an intermediate level of scientific and industrial development - a program, suitably modified, much like that of the Science Talent Search and related science education activities in the United States. To be specific, I have in mind a program that would have the following features:

1. An annual Science Talent search among secondary school students, the winners of which would be awarded University scholarships, at least some of which would be adequate in amount to finance University attendance in the United States.

2. These scholarships would be funded by private U. S. sources including U. S. firms doing business in the country concerned and, perhaps, the privately funded foundations. The specific sources of funding would vary from country to country, depending on the identity of the principal U. S. firms, and their interest in participating in the program. The projects would, of course, be evaluated by impartial, first-rank scientists drawn from both the U. S. and the other nation.

3. At least some of the scholarships should be adequate in amount for study outside the country in which they are awarded, including the United States, although I consider it important that these principal scholarships not be limited to use in U. S. universities. Toward this end, the principal scholarships should probably be adjusted to actual costs, to avoid creating a financial incentive to use the scholarships in countries of lower cost than the United States.

4. The scholarships should not be an end in themselves, but rather the centerpiece of a broad program of improvement of secondary school science education, including science fairs, teacher training, curriculum assistance, and the like. The funding for this phase of the program should be similar to that of the scholarships, but should also involve a direct and substantial contribution from the host government.

5. Administratively, it is important that the program be run by an experienced non-profit institution - possibly Science Service -- to ensure efficient and continuous administration.

I see a number of advantages to such a program, among which are:

1) The program would fill a gap in U. S. and other donor nation's scholarship and educational assistance programs, which now concentrate on the university graduate and post graduate level, by providing meaningful assistance at the secondary school level.

2) The program would provide technologically-based U.S. industries doing business in these countries a constructive opportunity to improve their images in the increasingly nationalistic climate in which they must operate.

3) By the same token, the program will not only provide genuine assistance but will have a constructive effect on the political attitudes of a group - secondary school students - at an especially formative and impressionable age.

4) The program would attract new, private resources into the field of educational assistance, which are badly needed as government funds have become increasingly scarce.

In terms of the countries where such a program might make sense, I have the parochial view that Argentina would be the ideal candidate for the first application. It has a surprisingly highly developed science program, and a strong interest in scientific achievement. Its two Nobel Prize winners in science - the late Dr. Houssay and Dr. Leloir - have achieved virtually the status of national heroes. It has a Science Fair program (I have not yet had a chance to learn how good it is), and a national science education improvement council. Thus, it has the basic elements which might enable the kind of program which I have described, under the proper leadership, to stimulate a quantum jump in support for and improvement of secondary school science education.

In my view, the natural, and I would not hesitate to say, the only logical candidate to head such a program is yourself, and I would very much hope that it attracts your interest. It is, of course, a long-term program and one which would require a great deal of careful exploration and preparation before any positive results would be visible. These preparatory steps would include, it seem to me, consultation with the State Department, with potential administrative organizations, and, of utmost importance, with potential donors to determine whether the program could be adequately financed.

I would be very pleased to hear of your reactions to this idea, and especially of the possibility of your own participation in such a program. I will be leaving Argentina for a combined business trip and vacation on January 15, and will be in Washington during the period January 16-26. I will be back in Buenos Aires about February 12. If there is any possibility that you will be around Washington during the period that I will be there, it would be a great pleasure to see you.

Since I believe his interest and support could be crucial to the success of this project, I am providing a copy of this letter to Herman Pollack.

With Best Wishes to you and Mrs. Seaborg for the New Year.

Sincerely,



Myron B. Kratzer  
Scientific Attaché

At 4:00 p.m., I attended the regular Nuclear Physics seminar in the conference room of Building 70A. Dr. Barry Borman of Lawrence Livermore Laboratory spoke on the origin of  $\text{Xe}^{131}$  on the moon. He thinks it comes from the capture of neutrons by  $\text{Ba}^{130}$ .

Eric, Suki and I took a hike to the water tank.

Tuesday, January 25, 1972 - Berkeley

I had an appointment this morning with Dr. Dannenberg, my allergist, at the Walnut Creek branch of the Kaiser Hospital. I underwent skin scratch tests and found that I am still sensitive to spring grasses of about six varieties. I will use a proper mixture of antigens in self injection.

I had lunch in the cafeteria with the nuclear physics group.

After lunch, I met with Hyde and Street to discuss our budget picture for fiscal 1973. The AEC has allotted our Nuclear Chemistry Division \$845,000--down 3.6% from fiscal 1972 (to which must be added about 4% more due to inflation); this means that we will have to decrease staff by about 20 persons and we discussed how to identify these--perhaps we will have to cut a few postdoctoral positions.

David Okrent called me from UCLA at 4:35 p.m. to invite me to be the lead-off speaker in a series that will discuss light water nuclear power reactors, including their safety and environmental aspects. I declined on the basis that I am not indulging in talks of this type at the present time, and am too busy. He said he is teaching in the nuclear engineering area at UCLA.

I drove by our Orinda land and found the horses still off. Mrs. Young (Sam Trull's daughter) said they are having a hard time since they vacated our land.

Wednesday, January 26, 1972 - Berkeley

I conferred with Hyde and Diamond about the distribution of the Division's electronics personnel and the need for more such people at the SuperHILAC.

I had lunch in my office, joined by Sheila, and then taught my Chemistry 1B section in Room A--a written quiz was given.

I met with Jose and Carol Alonso, along with Ghiorso, in my office; we are offering them positions with the SuperHILAC group to replace the Eskolas who are leaving this summer.

Jack Hollander, Andrew Sessler and I met to map strategy for acquiring funding support from NSF, EPA, etc. for our evolving Environmental Chemistry program.

I met with Dave Shirley to discuss the possible promotion to full professor of chemistry of five associate professors (John Hearst, Sanes, Brad Moore, Gabor Somorjai, Sam Markowitz). All will be



recommended for promotion, but Markowitz's lack of research is a problem.

It snowed late this afternoon at the Lab. I drove through hills blanketed with snow on the way home over Grizzly Peak Boulevard. I took a cold hike with Eric and Suki to the water tank.

Thursday, January 27, 1972 - Berkeley

I met with Dan Wilkes to discuss the problem of SESPA (and Charlie Schwartz); they have threatened to make things difficult for me because I have declined their invitation to debate on the issue of the AEC and the public interest.

Jerry Howland came in at about 10:30 a.m. to discuss the possibility of his working with me on the Met Lab Section C-1 history, using the materials I brought with me from Washington; he seemed interested.

I met with Gerry Babcock, a Chemistry Department graduate student who is interested in working in Africa after he gets his Ph.D., to go over conditions, needs, prospects, etc. in African universities.

At 12:30 p.m., I went up to the HILAC to greet the members of the Committee on Space Biology and Medicine (Space Science Section) and the Radiological Advisory Panel of the National Academy of Sciences who are attending a three-day meeting at the Lawrence Berkeley Lab. I then had lunch with the group in the lower room of the cafeteria. They are interested in research with heavy ions as applied to NASA astronaut problems. Among those I talked to are Charles A. Berry (head of space biological research at NASA and whom Helen and I met at a dinner in Geneva on September 6), Victor P. Bond, Shields Warren, Ann Wagoner (National Academy of Sciences secretary assigned to the Panel), and Cornelius Tobias (who acted as host for LBL).

Bill McHarris, of Michigan State University, and a 1965 Nuclear Chemistry Ph.D., dropped in at 3:00 p.m. on a courtesy call; he is at LBL on a sabbatical this academic year and will stay until September.

I called Bill Corliss at his home in Maryland at 3:15 p.m. to ask if he had heard anything more about reviews on the book. He thought that the publisher sells as many copies as possible on the basis of reviews before going into advertising, and that purchases by the utilities accounted for our going into the second printing. He said that a chemist told him he saw a review in Chemical Engineering News. Bill will get the exact information and send it to me. He said that he had already been pressuring Doerflinger about the lack of reviews. He expects to go to New York in the next couple of weeks and will pick up a copy of the second printing.

George Pappas called me at 4:25 p.m. to discuss matters for the 1973 budget. Paul Donovan returned my call to him in Washington at 4:55 p.m. I urged him to take positive action on the environmental research proposals by Jack Hollander and Andrew Sessler, submitted to the RANN program of NSF.

Friday, January 28, 1972 - Berkeley

At 8:45 a.m., I talked with William Doerflinger, editor of E. P. Dutton and Company in New York. I gave him the name and address of Wilhelm Goldmann-Verlag, whom he will contact about Fritz Weigel's translation of Man and Atom. He indicated that they should probably work through Dutton's agents in Europe; it is possible that they already offered the book to someone else in Germany for translation. I told him that I had heard from a Soviet friend that they are translating it in the USSR but that I didn't expect royalties from it, since they normally do not honor international copyright agreements. He is following up the reviews, status of the second printing, possibility of getting royalties from the Soviet translation, and the German translation.

From 10:00 a.m. to noon I attended the meeting of the SuperHILAC group in the HILAC Building. Ray Nix, of Los Alamos, attended as a visitor. Swiatecki described methods, with early availability, of increasing the neutron to proton ratio in the product superheavy elements. Possibilities include (1)  $\text{Pu}^{244}$  plus  $\text{Pu}^{244}$ , (2) accelerate  $\text{Sr}^{96}$  fission fragments, (3) flying fission method, e.g. shatter  $\text{Th}^{232}$  in deuterium, and (4) production of neutron rich products in heavy ion bombardments by grazing collisions. The last is probably the most feasible for early use, using products both at 30-40° and at 0° (produced by another mechanism).

Jose Alonso then described the work of a Yale HILAC group (John Rasmussen, Ivan Rezanka, T. Tamura, S. Iwata, C. Alonso, J. L. Bellis) on inelastic scattering (coulomb excitation) by heavy ions. He also described their work on millisecond isomers. Carol Alonso described work at the Yale HILAC on angular correlation of gamma rays as perturbed by magnetic fields, and on the calculations of Coriolis forces.

Ghiorso spoke on his scheme for determining the formation of a compound (superheavy) nucleus by measuring the angular distribution of its fission products. Swiatecki said this doesn't prove that the intermediate species had a spherical shape as required to be a compound nucleus.

I presided over the regular biweekly luncheon meeting of the Division's Program Committee in my office. All except Iz Perlman attended. The discussion followed the agenda sent out by Earl Hyde. We reviewed our plans for the visitors who would be here on February 3-4, in conjunction with the APS meetings (January 31-February 4) in San Francisco. Bernard Harvey outlined his program for the morning of the 4th in the conference room. Jack Hollander described developments in the Environmental Chemistry program--noting that Paul Donovan would be here to discuss it on February 3. Kenneth Street reviewed the requests for foreign travel and presented an overview of our present budget status. Hyde announced that the first Senior Staff meeting would be called for Tuesday, February 8.

At 2:45 p.m., I talked by phone to Hulet Hornbeck of the East Bay Regional Park District about the route of the hiking trail over Lafayette Ridge that he is going to try to arrange hiking rights for.

He said that Stewart Udall is becoming involved in devising a master plan for the District and I will be invited to become a member of a Citizens' Committee to help in the planning.

From 3:10-4:00 p.m., I attended a meeting of the Search Committee for a Director for the Lawrence Hall of Science in 793 Evans Hall. Present were Charles Birdsall, Merle Borrowman, Harold Johnston, and Sherwood Washburn. Leon Henkin was called away on other business. We reviewed my connection with the original establishment of the Hall and my general philosophy as to the direction that it should take. I indicated that I favored the museum aspect as well as the science teacher training aspect. We discussed a number of possible persons to succeed Alan Portis as Director, including George Pimentel, Robert Karplus, Richard Powell, and Carl Helmholtz. I gave my evaluation of each of these. In response to inquiries, I indicated that I did not consider myself available to take this position.

After dinner, Eric and I went by Lynne and Bill's cottage in Piedmont and then to Harmon Gym on the campus to watch the Berkeley Bears beat the Davis Aggies, 100-67. We met and talked to Chancellor and Mrs. Bowker and Dick and Jan Erickson at the game.

#### Saturday, January 29, 1972 - Lafayette

Jim Holliday dropped by our home at 11:30 a.m. to bring me up to date on acquiring green spots for the Lafayette community along Mt. Diablo Boulevard. He identified the spots and I agreed to approach Henry Kaiser for funds to acquire two pieces of land in the area of the Pleasant Hill Road interchange

Helen drove to the Oakland airport to pick up Bob Jansen, who will spend the weekend with us. After lunch, Eric drove Bob into Berkeley where he visited friends and had dinner.

Eric and I drove up and down Mt. Diablo Boulevard to identify the areas that our citizens' group hopes to preserve as green spots. We then went to Briones Regional Park where we hiked the road through Homestead Valley to the southeast corner to find the connection with the trail on Lafayette Ridge--this is the project on which I am working with Hulet Hornbeck.

Helen and I attended the 6:30 p.m. wedding of Mimi Barbachano, daughter of Helen's longtime friend Bee, to Gene Suits in the Trinity Lutheran Church in Walnut Creek. Following this we attended the wedding reception at the Round Hill Golf and Country Club.

#### Sunday, January 30, 1972 - Lafayette

After breakfast, Bob Jansen left to visit Berkeley and then return home to Anaheim. In the afternoon, Eric, Suki and I investigated the route of the proposed Lafayette Ridge hiking trail by driving up to the tops of Brown Avenue and Martino Road. We then drove along Reliez Valley Road, Alhambra Valley Road and Briones Valley Road to the north (Alhambra Valley) entrance to Briones Regional Park and took a hike into the northeast corner of the park.

Monday, January 31, 1972 - Berkeley

Oliver, Steve's boa constrictor, died last night due to exposure to the cold--the heater went off.

Jerry Howland started to work today on my project to construct the history of Metallurgical Laboratory Section C-1 from available records.

At 8:55 a.m., Morris Hellman of West Los Angeles College in Culver City called to ask if I would be their commencement speaker on June 15, which I declined.

I had lunch with the Chemistry faculty in the O'Neill Room of the Faculty Club, after which I taught my Chem 1B section in Room M.

Harrison Brown called me from Pasadena at 3:00 p.m. He told me that under a bilateral exchange program with the Bulgarian Academy of Science, eight Americans are going to get together with ten Bulgarians on the Black Sea in June to talk about science in Bulgaria. The group may include Brown, Ivan Bennett, Herb York, Carl Djerassi, and Emilio Daddario. The meeting will last from 5-7 days; he tentatively has set the dates of June 8-17. He asked if I could go, but I have a AAAS Board meeting in Washington on the 17th.

Eric, Suki and I took a hike to the water tank.

I wrote Ioan Ursu, President of the Romanian State Committee for Nuclear Energy in Bucharest, giving him my permission for the translation of Man and Atom into Romanian.

Tuesday, February 1, 1972 - Berkeley

At 9:00 a.m., I went to Kaiser Hospital in Walnut Creek to be tested for allergic reaction to dust and dander--the result was negative, indicating I have overcome this allergy. Dr. Dannenberg gave me the allergens for self-injection (with disposable needles and syringes) for spring grasses--twice-a-week injections with gradually increasing concentrations of allergens.

John Rasmussen, here to attend the San Francisco meeting of the American Physical Society, dropped in to discuss the meetings of the SuperHILAC Users Group on Thursday (at the San Francisco APS meeting) and on Friday (at the HILAC Building). Later I learned from Earl Hyde that Rasmussen might like to spend two years here, on leave from Yale, beginning next September.

I had lunch with the Nuclear Physics group in the cafeteria.

Ted Sherburne called me from Washington at 1:45 p.m. to ask if I would okay their raising the subscription price of Science News to \$10.00. I said that I would, but thought he should consult each member of the Board. He told me that Frederick Seitz had talked to James Coles, and that the door is open on getting funds from the Research Corporation. He said that he is getting the letter ready for Phil Handler to renominate Gerald Tape as their representative

Trustee. I told him that I thought Leonard Carmichael should get a plaque of some sort at the banquet and, assuming he would be sufficiently recuperated from his recent surgery, be brought to the podium for the presentation.

At 6:30 p.m., I attended the initiation banquet of the Order of the Golden Bear in the Great Hall of the Faculty Club. I sat at the head table with Warden Leigh Steinberg, Garff Wilson, who acted as toastmaster, Chancellor Albert H. Bowker, Daniel Honigman, who was the speaker for the new initiates, and Robert Cross, another officer of the Order. Wilson introduced the speakers who were Steinberg, Honigman, Bowker, and me. I spoke on the topic "Atoms on the Hill," illustrated by slides. The screen was in front of the speakers' table, so I had to go down on the floor with the audience and speak without notes. Bowker gave a charming speech in which he described the complicated selection process by which he was chosen as Chancellor.

In the course of the evening I met a number of people, including: Margo Cheatham, a physiology student who reminded me that she had met me in my Chairman's office in Washington as part of the Cal-in-the-Capitol group; Dave Maggard, the recently appointed Director of Athletics; Lon Spurrier; and Ben Lom. Also present were Mike White, Mark Christensen (new Assistant to the Chancellor), Vice President Chester McCorkle, Don McLaughlin, and many old alums going back as far as the Class of 1912.

#### Wednesday, February 2, 1972 - Berkeley

I wrote a first draft of a guest editorial for Vortex, which is scheduled to inaugurate a series of these. I sent Jane Wilson my short memorial on Vikram Sarabhai for publication in the Bulletin of the Atomic Scientists. I then wrote Clinton Anderson to congratulate him on his impending retirement from the U.S. Senate (copy attached). I also wrote Hulet Hornbeck that I would be happy to serve on the citizens' group to guide Stew Udall (copy of incoming letter attached).

I had lunch in my office, and then taught my Chem 1B section in Room A. After my lecture, I met Lynne Catonico of Berkeley who had come by to see me. She was one of the 40 winners I met at the Science Talent Search in Washington in 1969 and wanted to renew our acquaintance. She is a junior majoring in biochemistry and her younger brother is a freshman here.

Eric, Suki and I took a hike to the water tank.

#### Thursday, February 3, 1972 - Berkeley

Jerry Howland put in his second day of work, familiarizing himself with our voluminous material on the Met Lab Chemistry Section C-1 History.

I met with Paul Donovan and Paul Craig of the Division of Advanced Technology Applications of RANN (Research Applied to Natural Needs) of the NSF, Jack Hollander, and Andy Sessler to discuss our

February 2, 1972

THE HONORABLE CLINTON P. ANDERSON

Dear Clint:

It is with mixed feelings that I write to express, on behalf of Helen and myself, to you and Henrietta our heartfelt best wishes on the occasion of your impending retirement from the United States Senate. We know that you are looking forward to the relative peace and quiet that will be afforded, but we also know how much you will be missed in Washington.

You have an extraordinary record of public service--first as a Representative of your state of New Mexico to the United States Congress, then as Secretary of the Department of Agriculture, and finally in your four terms as United States Senator. The sum total of this is an almost unparalleled record of unselfish and efficient service to the people of the State of New Mexico and of the United States as a whole.

I personally owe you a great debt of gratitude for the help that you gave me during my ten years as Chairman of the Atomic Energy Commission. Our rapport and long period of working together began with that day in February 1961, when I visited you in your office and we learned that we shared the heritage of Dalarna, Sweden in our parentage. Since that time, we have fought many battles side by side and, I would think (or at least hope), these were in the public interest.

Helen and I wish the very best for you and Henrietta in the years that lie ahead.

With our warm good wishes,

Cordially yours,

Glenn T. Seaborg



# EAST BAY REGIONAL PARK DISTRICT

11500 SKYLINE BOULEVARD/OAKLAND, CALIFORNIA 94619/TELEPHONE (415) 531-9300

BOARD OF DIRECTORS: FRED C. BLUMBERG, President; MARLIN W. HALEY, Vice President; PAUL J. BADGER, Treasurer  
PAUL E. HARBERTS, Secretary; JOHN A. MACDONALD, CLYDE R. WOOLRIDGE, DR. HOWARD L. COGSWELL □ RICHARD C. TRUDEAU, General Manager

January 27, 1972

*SSS 1/31/72*

Dr. Glenn Seaborg  
Lawrence Radiation Lab  
University of California  
Building 70A, Room 3307  
Berkeley, Calif. 94720

Dear Dr. Seaborg:

Subject: Master Plan--EBRPD

The District has now engaged Stewart Udall to master plan the East Bay Regional Park District. As explained to you, this master plan will include an implementation element since we do have additional tax funds to use for land acquisition and development, at least over the next ten years. This study will be coordinated with a nine-county Bay Area park, recreation and open space study and both studies are coordinated through the Association of Bay Area Governments.

We will have a citizens' group to guide Mr. Udall and assist in this bi-county study. If you would be interested in serving on that committee, I understand that State Senator Nicholas Petris would be interested in nominating you for that purpose.

I hope that you will be interested in serving.

Sincerely yours,

Hulet C. Hornbeck, Chief  
Land & Water Acquisition & Management

HCH:la

proposals for support by NSF of environment research. We all had lunch together in the cafeteria and then continued the discussion in my office afterward. I then took Donovan and Craig down to see Dave Shirley to enable him to explore the possibilities of NSF support for some of his research. After this, they rejoined Hollander and Sessler to continue the discussions of our environmental proposals and to meet some of the proposed investigators. I also put them in touch with Charles Birdsall so he could explain his proposal for coordinated campus teaching and research in the field of energy and resources which needs some financial support.

Howard Brown dropped in at 2:00 p.m. and gave me a good rundown on the recent reorganization and other happenings at the AEC; he is leaving in about a month to accept the presidency of the Washington, D.C. operation of ElectroNuclear Corporation. He told me that he thinks Jim Schlesinger plans only a short tenure as AEC Chairman.

I wrote to Charles R. Bruce at Oak Ridge, thanking him for the original plate negatives for Nuclear Milestones. I also wrote Christian Herter, Jr., Special Assistant to the Secretary for Environmental Affairs, to familiarize him with our environment research program and to request that someone from the Lab be sent as an observer to the United Nations Conference on the Human Environment at Stockholm in June--I suggested Jack Hollander for the job.

Helen and I attended a reception at the home of Bernard and Margaret Harvey given for attendees of the S.F. meeting of the American Physical Society and the Heavy Ion meetings to be held tomorrow.

Friday, February 4, 1972 - Berkeley

Most of the morning, I met at the HILAC Building with a large group of potential SuperHILAC users and interested people. Among those present were John Rasmussen, Darrah Thomas, Arthur C. Wahl, Marshall Blann, Hans Bethe, Ron McFarlane, John Unik, "Chip" Britt, Fred Bernthal, Jim Cobble, Robert Epple, Richard Eppley, Jose and Carol Alonso, Earl Hyde, Al Ghiorso, Matti Nurmi, and many others. We toured the SuperHILAC and then went to the Conference Room, where Richard Eppley explained the computer program being set up for the users, and Ghiorso described the SuperHILAC and the available instrumentation for the users and answered numerous questions.

Many of the visitors had lunch together in the cafeteria. At 1:30 p.m., I met in my office with Rasmussen, Unik, Epple, Ghiorso, Hyde, and Diamond. We discussed the mechanics of operating the Users Group and of hiring a scientist to represent them at the Laboratory. We decided to offer the job to Richard Eppley at a salary of \$15,000 a year, to be furnished as an extra item by the AEC Division of Research for administration through the Laboratory Director's office without the application of an additional overhead charge.

In my office at 2:45 p.m., John Rasmussen and I discussed the matter which he had previously explored with Earl Hyde. He would like to come to Berkeley with the SuperHILAC group on a two-year leave-of-absence from Yale, beginning this coming September. Actually, he



would be here during each 9-month school year and spend the intervening summer back at Yale. He would bring a number of graduate students with him who might be supported by his Yale AEC contract. He would be willing to teach some courses on the campus, and thus would be agreeable to either a visiting professorship arrangement--wherein he would be paid by the University--or a straight position in the Lab. I told him that we would be delighted to have him and would somehow make the financial arrangements.

Following up a conversation John and I had about the Alonsos, at 3:00 p.m. I called George Trilling in the Physics Department on the campus. I asked him to give Carol Alonso some encouragement about the possibilities of her teaching in the Department if she and her husband came to Berkeley--either freshman sections or something during the summer. I thought he needed to do this to offset Stanford's telling her that the UCB Physics Department would not be interested. He said that he and Arthur Kip would try to see her today. (He acknowledged that her willingness to teach without stipend would make it easier on the department.)

Bernie Harvey held an all-day symposium on heavy ion transfer reactions which was very well attended.

Suki and I took a hike to the water tank. Eric went with friends to a movie at the California Theatre in Berkeley.

#### Saturday, February 5, 1972 - Lafayette

In the afternoon, Eric, Dianne, Suki and I took a hike in Redwood Regional Park, starting at the Skyline Boulevard gate and going on the East Ridge Trail nearly to its end, then down to the Stream Trail which we followed back to our starting point. It was raining and rather cold the whole way.

Bill and Lynne dropped by for dinner. In the evening we watched the UCLA-USC basketball game, televised from the Pauley Pavilion in Westwood, which UCLA won 81-56.

#### Sunday, February 6, 1972 - Lafayette

I spent a good part of the day working on a revision of my article on the Transuranium Elements for the Encyclopedia of Physics. Phil Abelson called in the morning to suggest that he run the opening section of Chapter 5 of Man and Atom as an editorial in Science. I agreed.

In the afternoon, Eric, Suki and I took a hike in Briones Regional Park. We hiked to the gate situated at Briones Crest on Briones Valley Road, then past Briones Peak and on the Crest Ridge Trail back to our starting point.

#### Monday, February 7, 1972 - Berkeley

I talked by phone to Jay Watson, head of Watson Communications Systems, Inc., about whether they are exceeding their right-of-way privileges in crossing our land with an underground CATV cable and

other things. Watson Communications leases the corner acre of land from Dorothy M. Cheney and then subleases services to a number of companies, including Bay Cable Vision, Monterey TV station KMST, repeater station for mobile units, etc.

I held my office hour in Latimer Hall and a number of students came in to visit. I had lunch with the Chemistry Department faculty in the O'Neill Room of the Faculty Club, after which I taught my Chem 1B section in Room M.

Peter Joseph called me from Princeton at 2:10 p.m. in response to my offering him a tape recorded conversation to be used in writing his senior thesis. We discoursed on the fear of fallout and of nuclear war at the beginning of the 1960's, how this lessened towards the end of the decade, and how nuclear power grew during the decade. I mentioned that the breeder reactor represents the next big step, and recommended that he read Man and Atom in order to understand this concept and the general background of the subject.

Helen, Lynne, Bill, and I attended a buffet-reception in the Pauley Ballroom of the Student Union for Dave Maggard, new Athletic Director, and Mike White, new football coach, and his seven assistant football coaches. Chancellor Bowker gave a short talk, then introduced Maggard, who gave a short talk, and then introduced White. Mike gave a charming talk and then introduced his assistants.

Tuesday, February 8, 1972 - Berkeley

I called Harrison Brown in Pasadena to tell him that I couldn't undertake the Bulgarian trip in June because it comes during final exam period. I told him that I would be going to the Soviet Union in September, and wondered if there would be any value in one's doing a visit to Bulgaria alone. He thought it might be possible--that I could spend a day in Sofia as an emissary of the Academy. He will be in touch with me about this.

Dr. Karen Claus phoned me from Santa Rosa. She and her husband George Claus want to treat small nuclear power reactors in Part IV of their book, but it would be similar to the material in Man and Atom; I said this wouldn't worry me. I encouraged them to get in touch with Sigvard Eklund in Vienna, mentioning that they had discussed it with me.

Earl Hyde and I presided over a meeting of the Senior Staff of the Nuclear Chemistry Division in the conference room of Building 70A during the lunch hour. This was the first of a series of approximately monthly meetings (list of those involved attached). Hyde brought the group up to date on organizational changes in the Division, the creation of the Environmental Chemistry group, and the fiscal 1972 and 1973 budget situations. Ghiorso gave a status report on the Super-HILAC and Hollander gave a report on the Environmental Chemistry program.

I viewed the Perlman-Asaro film on pottery dating, and visited the HILAC Building to view progress and to meet Norbert Trautman, here from Professor Gunter Herrmann's laboratory at the University of

2/8/72

1

3 49a

LAWRENCE BERKELEY LABORATORY

ROOM BLDG.: EXT.:

MEETING OF  
SENIOR STAFF AND GROUP LEADERS  
NUCLEAR CHEMISTRY DIVISION

Tuesday, February 8, 1972

12:00 - 1:30 p.m. (Brown Bag Lunch)

Conference Room 3377, Building 70A

\* \* \*

Distribution:

Frank Asaro  
Harry R. Bowman  
Joseph Cerny III  
David J. Clark  
John G. Conway  
Homer E. Conzett  
Richard M. Diamond  
Norman M. Edelstein  
Warren M. Garrison  
Albert Ghiorso  
Norman K. Glendenning  
Frederick S. Goulding  
Klaus Halbach  
Bernard G. Harvey  
Alvin J. Hebert  
David L. Hendrie  
Jack M. Hollander  
Earl K. Hyde  
Almon E. Larsh, Jr.  
C. Michael Lederer  
Robert M. Main  
Samuel S. Markowitz

Richard Marrus  
Maynard C. Michel  
William D. Myers  
Amos S. Newton  
Matti J. Nurmi  
Isadore Perlman  
Arthur M. Poskanzer  
Herman P. Robinson  
Glenn T. Seaborg  
David A. Shirley  
Frank S. Stephens  
Kenneth Street, Jr.  
Wladyslaw J. Swiatecki  
David H. Templeton  
Stanley G. Thompson  
Allan Zalkin  
  
James A. Harris  
Doral Buchholz  
Gertrude Steel

Mainz to work on chemical identification of heavy elements produced at the SuperHILAC.

Eric, Suki and I took a hike to the water tank.

I mailed the manuscript of my article "Nuclear Energy and the Environment" to John Hall (IAEA in Vienna) for publication in the April 1972 issue of the IAEA Bulletin.

Wednesday, February 9, 1972 - Berkeley

At 8:45 a.m., Mrs. Arthur Felt called me from New Orleans and invited me to be the opening night speaker at the International Science and Engineering Fair there on May 2. She will send me some of their material for my review before I decide whether or not to accept.

I had lunch in my office, then walked down to teach my Chem 1B section in Room A. After this, Street and I met with Charles Wilke in his office to discuss his budget for support of engineering research, which is part of the Nuclear Chemistry Division Budget. We told Wilke that due to the cut in our budget we would have to reduce his budget to \$40,000 (from the present \$110,000) next year and eliminate it entirely the following year.

At 4:30 p.m., Hollander and Sessler dropped into my office to discuss the possibility of starting a rather extensive energy research program (including fusion and solar energy) at LBL; we agreed to start to move in that direction.

Luis Alvarez and William Nolan came by my office and showed me a letter that they had received from A. G. Tarkhov, indicating that he would like to participate in the project of examining the pyramids of Egypt to look for voids. Alvarez thought that if this could be called to the attention of people in Washington, where he has been unsuccessful in getting support, they might recognize it as another potential Aswan Dam affair and galvanize into action. He has sent copies of the letter to John Slossen in the Division of International Programs of the AEC, and to Guyford Stever and Edward Creutz of NSF to see whether they could generate some support. If no support is forthcoming, Alvarez may tell Tarkhov to go ahead, possibly also collaborating with him in the experiment.

Thursday, February 10, 1972 - Berkeley

At 9:00 a.m., I called Robert Penneman at Los Alamos to discuss several matters. I asked him for any thoughts he had for my review of Cornelius Keller's book, The Chemistry of the Transuranium Elements, which I am preparing for Nature. We agreed that it is very good, very up-to-date. Keller is strong on crystal structure and coordination compounds, but the chemistry of the heavier elements is not covered in great detail and there is little extrapolation in Part II. Bob told me that Oren Williams of NSF had called him about a visitor from Sweden, at which time he asked about travel funds for Larry Asprey to attend the Spitsyn symposium in Moscow in September. Williams told him that it would be an exception but that NSF would consider the

request. Larry came on the phone, and I verified that I would write a supporting letter to NSF. Bob told me that at Los Alamos they have done the dichlorides of Am and Cf, but not the dibromide and iodide. He thought, but wasn't sure, that Russ Baybarz had done the dibromide.

At 11:30 a.m., I met in my office with Charles (Ned) Birdsall, Michael Lieberman, Jack Hollander, Andy Sessler, and Earl Hyde, and continued the discussion at lunch in the cafeteria, where we were met by Bill Wenzel. We discussed a proposal for the laboratory to get into energy research, perhaps beginning with a fusion program. Birdsall is already making some proposals to PG&E and to Bennett Miller of the AEC CTR Division. We also discussed the possibility of including solar energy research in the program. It was decided that Wenzel and Sessler will talk to Ed McMillan about this, perhaps this afternoon. I told Birdsall I would probably be out of town at the time of his proposed Third University-Industry Conference on June 15, and therefore he should not put me on the program. However, I might participate in the program if my schedule should change at the last moment.

On my way back to my office, at 1:00 p.m., I ran into Dave Shirley in the hall. We talked about John Rasmussen's desire to come here on a two-year leave of absence. I asked him--as I had asked Dave Templeton last Monday--to see whether they could cover his salary for part of the period as a Visiting Professor. Shirley would like Rasmussen to make up his mind as soon as possible whether he is going to come back with us permanently; this would be necessary in order to save Perlman's spot for him, should Perlman decide to leave. I told Shirley that, although I would like to see Burris Cunningham's position filled sometime, I didn't think we should try to do so this coming year, but would have Edelstein continue to sort of cover the actinide chemistry field through his collaboration with faculty members on the campus.

I talked with Stan Thompson and Earl Hyde about arrangements for making chemical identifications of superheavy elements formed at the SuperHILAC, in cooperation with Ken Hulet, John Unik, the Argonne group, etc.

I took a hike with Suki to the water tank.

Friday, February 11, 1972 - Berkeley

I called Jay Watson again about right-of-way over our land in Orinda. He said his partner, Dick Spight had discussed this with Emilio Segre three years ago. He emphasized that they have full rights, including Cable TV rights, and would willingly go to court to prove it.

I talked to Dick Diamond about the possibility of his working on the chemical identification of superheavy elements produced in the SuperHILAC.

I talked to Jim Holliday to ask him to obtain the asking price and other information concerning the Mt. Diablo Boulevard land about which I am supposed to approach Henry Kaiser for purchase funds. He

hasn't done anything on this since the two of us met, but will get back to it.

At 10:00 a.m., I attended the regular biweekly meeting of the Superheavy Element Chemistry group in the Building 70A conference room. Mike Nitschke described the apparatus and computer control equipment for the proposed experiment to make a chemical identification of element 105 using the Dowex-50, Alpha-hydroxyisobutyrate ion exchange system. Then Norbert Trautman described his experiments at the University of Mainz for fast chemical identifications. Hulet described some extraction chromatography with Aliquot 336 (quaternary amine) with HCL elution on lead and bismuth.

From 12:00-1:00 p.m., the Program Committee of the Nuclear Chemistry Division held its biweekly bag-lunch meeting in my office. All except Norman Glendenning were present. Earl Hyde announced that on March 1, we will cut down our owl shift and weekend coverage. In other areas of budget restrictions, I told the committee about Ken Street's and my meeting with Charles Wilke, who agreed to reduce his budget from \$110,000 to \$40,000. Several people are being let go from research accounts (e.g., Ursula Abed and Suzanne Halverson, who is going on to an AEC training program). Earl asked for a 1-2 man committee to see how feasible it would be to make a saving in the maintenance of liquid air in the Dewars throughout our apparatus. Ken Street listed the requests against the foreign travel budget, which will exhaust those funds if all are granted. I described Charles Birdsall's proposal for an energy program.

I talked to Sam Markowitz and his graduate student Norman Jacob about their working on a research problem of radiochemical identification of products at the SuperHILAC.

Helen and I had dinner at the Charles Hitches', given in honor of the University Professors. Present were the Harold Ureys, Melvin Calvins, Charles Townses, and Edward Tellers. At the end of the dinner, Hitch made a toast to us, including the story of President Kennedy's famous "Thomas Jefferson" toast at the large White House dinner for Nobel Prize winners. Urey responded on our behalf, using Isaac Newton's story about standing on the shoulders of giants. At 9:45 p.m., I received a phone call at the Hitches from Bob Wilson, calling from the National Accelerator Laboratory, informing me that they had just achieved a 100 GEV proton beam (about  $10^9$  particles per second). He wanted to inform me first because of my role in obtaining the Accelerator.

Bill and Lynne had dinner at our house prepared by Helen before we left.

Saturday, February 12, 1972 - Lafayette - Berkeley

Dianne had an interview test to see if she qualifies as a gifted child.

I attended the Annual Baseball Lunch given by the Big C Society in the Dining Hall of Residence Hall Unit #3 (corner Durant and Dana in Berkeley). This is the 25th anniversary of our 1947 NCAA champion-

ship and 15th anniversary of our 1957 NCAA championship; so members of these two teams were present. Lyle Palmer spoke for the 1947 team. George Wolfman was master of ceremonies. Clint Evans got up from a sick bed to attend and spoke briefly. Gary Hernandez (batting average .459 in the Pacific-8) was presented the Batting Trophy (oldest UCB athletic trophy) by Wolfman and the Most Valuable Player Award (Clint Evans Award) by Clint Evans for the 1971 season. His father played baseball at Mission High School when Wolfman was coach there.

I gave a few remarks, reminiscing about the 1947 and 1957 teams, stating that I received an individual trophy along with the 1957 team members. Mike Epstein gave a charming and humorous talk about some of his experiences with the Washington Senators (he doesn't have a high opinion of Ted Williams as a manager).

Eric, Suki and I took a hike in Las Trampas Wilderness Regional Park. We drove in via Bollinger Canyon Road, coming off Crow Canyon Road. The park is not developed yet, but there are some good hiking trails.

Sunday, February 13, 1972 - Lafayette - Oakland

I spent a good part of the day reading and working problems in George Pimentel's and Richard Spratley's book for Chemistry 1B.

In the afternoon, Helen, Eric, Dianne, Suki, and I visited the zoo in Knowland State Park in Oakland. While we were there, I did some hiking on the trails in the park.

Monday, February 14, 1972 - Berkeley

Jerry Howland called and said he has decided not to continue his work on the history of Met Lab Section C-1; this was a real blow.

Sheila, Earl, Doral, and I agreed to offer Eileen Eiland the position as Doral's replacement when she retires next summer.

I held my weekly office hour (with a couple of customers), then had lunch with the Chemistry Department faculty in the O'Neill Room of the Faculty Club, after which I taught my Chem 1B section.

At 2:55 p.m., I received a call from Rick Todd of PG&E, who was calling for the Environmental Writers Group in Oakland. He recalled that we had last talked at a lunch in Washington with Jim Corley, at the time of the Bodega slick problem. He asked if I could be on a panel on Friday, February 18, to discuss the initiative on the June ballot which would put a five-year moratorium on nuclear power plant building. I indicated that my schedule was too heavy for me to do so and that I had decided to declare a moratorium on getting involved in any such debates. I suggested that he check out Bill Libby, Charles Birdsall, or Emil Mrak.

Helen was ill today, so Dianne and Eric prepared TV dinners for the three of us.

Tuesday, February 15, 1972 - Berkeley

I had lunch with the Nuclear Physics group in the downstairs room of the cafeteria.

Bernard Harvey called to tell me that, due to budget constraints, the 88" cyclotron will be closed down during the last three weeks of June, requiring their staff to take their vacations at that time.

At 1:00 p.m., in Edwin McMillan's office in Building 50, the following met with Dr. John A. Perkins, the new University Vice President for Business and Finance who is replacing Jim Bannerman and, hence, is responsible for the major AEC contracts: Edwin McMillan, Harold Fidler, George Pappas, Daniel Wolf, Duane Sewell (Livermore), Elmer Kelly, Dick Connell, Robert Thornton, Leo Brewer, James Born, William Wenzel, Victor Zackay, Melvin Calvin, and me. Short reports concerning the programs for which they are responsible were given for the benefit of Perkins by Wenzel, Brewer, Zackay, Born, Calvin, Kelly, and me.

After Vice President Perkins left at 2:00 p.m., the meeting continued (until 3:10 p.m.) with a discussion of the recent visit to AEC/Washington of Pappas and Connell and the recent directive from President Hitch's office regarding the new personnel rules whereby retention of people will be based primarily on seniority. Connell will circulate a memorandum protesting this, upon which we might comment. It was pointed out that periodic appraisals of people might be helpful in combatting contested cases of dismissal. I told them about the call from Bernie Harvey about the 88" cyclotron plans.

Eric, Suki and I took a hike to the water tank.

Wednesday, February 16, 1972 - Berkeley - Orinda

Stan Thompson dropped in to discuss the superheavy elements identification program. We agreed that he will call John Unik at Argonne to suggest that they send one of their chemists to work here and that he will write Professor Herrmann at Mainz to ask if he can send us a chemist.

I called Jerry Howland and asked him to continue his work on the history project on a very limited basis, which he agreed to do.

Dick Mack dropped in at 11:00 a.m., with Earl Hyde, to describe his NSF project, "Instrumentation for Environmental Monitoring." This is the Laboratory's first large NSF project and it is going well.

I had lunch in my office, then went down to Room M to teach my Chemistry 1B section.

Eric, Suki and I took a hike to the water tank.

After dinner, Eric drove me to Miramonte High School in Orinda where I talked to the Acalanes High School District Science Seminar on "The Transuranium Elements." I talked from 7:30-8:30 p.m., using



slides, followed by questions. About a hundred students and a number of teachers were present. I was introduced by David Deye, Student Chairman. Mrs. Parker, Parent Chairman, was also present.

Thursday, February 17, 1972 - Berkeley

Norbert Trautman dropped in at 10:30 a.m. to say goodbye; he is returning to Mainz via Oak Ridge, tomorrow. He will speak to Professor Herrmann about their sending another nuclear chemist, perhaps Jens Kratz, to work with us on the chemical identification of the super-heavy elements. He will also send me a number of reprints on the general subject.

Dave called from Davis to give me a general status report on his aspirations and plans. He hopes to talk to Professor Fred Wilt, UCB Department of Zoology, and to Professor James F. Bonner, Cal Tech, about doing graduate work with them.

I had lunch in my office.

Lew Keller phoned me from Oak Ridge at 1:25 p.m. He said that he had understood from Joe Lewin that I had arranged invitations from V. I. Spitsyn for them to attend the Moscow Symposium in September, and that Russell D. Baybarz and Don Ferguson of ORNL would also like invitations. He indicated that they are trying to arrange for Baybarz to go to Karlsruhe to work with Werner Mueller; his going to Russia would be contingent on this working out. Baybarz would give a paper on californium and einsteinium chemistry--the Cf dibromide, possible different valent states of Es, etc. I told him that the abstract would be due on March 1. He will send it to me, and I said I would write Spitsyn. He mentioned that Norbert Trautman would be visiting them shortly. He added that they didn't have much potential chemistry going on in the superheavy elements; I asked if they had anyone else besides Bob Silva who could come out to Berkeley, and he said he would give this some thought. I suggested that I might stop over at Oak Ridge on my way from New York to New Orleans on May 1. He was very enthusiastic about this, and said that all of my previous visits had been extremely fruitful for them. I told him about the Encyclopedia Britannica's adding the detailed predictions of elements 119 and 120 to the article and wondered if he knew where they got the information. He thought they could only have received such material from me; Burris Cunningham, John Burnett and he had given me some material on this at one time. We agreed they may have used Thomas A. Carlson's material on the ionization potentials.

From 3:10-5:00 p.m., I attended a meeting of the Advisory Committee of the Lawrence Hall of Science at the Hall. George Pimentel, Chairman, presided. Those present were David Blackwell, John Hearst, Leon Henkin, Jonas Langer, John Matlin, Edwin McMillan, Lester Packer, Frederick Reif, Lloyd Scott, Sherwood Washburn, John Whinnery, James Cason, Terry Chinn, Nathan Cohen, and Frank Oppenheimer. A subcommittee to actively pursue questions raised in the Whinnery report was appointed with the following members: Reif, Hearst, Matlin, Packer, Chinn, Pimentel (ex officio), Todd La Porte, David Wake, and Alan Portis (ex officio).

After the meeting, the film "Wondering About Things," produced by the Lawrence Hall of Science under the direction of Dave Ridgway, was shown. This is a first-class film and has been shown to about 1-1/2 million people, including people in commercial movie houses.

Al Ghiorso called me at 5:15 p.m. to tell me that, because of budget constraints, they would be shutting down the HILAC and require all staff to take their vacations during the period of June 17-July 4.

I sent to Richard G. Elliott a foreword for his book, Nuclear Weapons Research and Development. In my capacity as Honorary Chairman of the International Nuclear Conference, which the Atomic Industrial Forum and the American Nuclear Society will hold in Washington in November 1972, I wrote Andronik Petrosyants (Chairman, USSR State Committee for Atomic Energy), inviting him to be a featured speaker (copy attached). I also wrote to Howard Brown in reply to his letter of February 14 (copy attached).

Suki and I took a hike to the water tank.

Friday, February 18, 1972 - Berkeley - San Francisco

I phoned Norman Cousins at 8:45 a.m., at his World Magazine office in New York, to invite him to become a member of the Board of Trustees of Science Service. I noted that there are four meetings a year in Washington, the next to be held on April 26th. He said that he would be glad to do it, providing he could wait until next fall to attend his first meeting. I thought this would be fine, and told him that the Washington headquarters would send him more information. I phoned Ted Sherburne to give him this news.

At 10:00 a.m., I attended the meeting of the Superheavy Elements group in Building 70A. Ghiorso announced the SuperHILAC shutdown in June-July and informed the group of our decision to invite Argonne nuclear chemists, and possibly other nuclear chemists, to collaborate in our chemical identification of superheavy elements. He then described SASSY in some detail, followed by Kari Eskola who described his calculations of the magnetic and electric fields that will be needed. Frank Selph then continued the discussion with some calculations of the rigidity of the particles.

Late in the morning, I drove with Emilio Segre and Jack Hollander to the Sheraton-Palace Hotel in San Francisco. We went to the Ralston Room, where I was scheduled to speak to the Commonwealth Club. Here we met John Arbuckle, the quarterly chairman, and Judge Murray Draper, the Club President, and were escorted to the head table.

At the head table were: Durward S. Riggs, Executive Secretary, Commonwealth Club; Clayton Elliott, Attorney; Emilio Segre; E. P. McElhany (Assistant to General Manager of Sales, Bethlehem Steel Co.), Chairman, Club's Study Section on Natural Resources; Jack Hollander; Murray Draper; John Arbuckle; E. C. Shute, Manager, San Francisco Operations Office, AEC; the Honorable A. Frank Bray, Presiding Justice, Court of Appeals (Retired) and Chairman, Club's Luncheon Program Committee; and me.

February 17, 1972

Mr. Andronik Petrosyants  
Chairman  
State Committee for Atomic Energy  
26 Staromonetnii Pereulok  
Moscow, U. S. S. R.

My dear Mr. Petrosyants:

You will recall that when I visited with you last August that I invited you, in my capacity as Honorary Chairman of the International Nuclear Conference which the Atomic Industrial Forum and the American Nuclear Society will hold in Washington on November 12-16, 1972, to be a featured speaker at that conference. You kindly replied that you would carefully consider this invitation.

We have proceeded with the formulation of this program and our hope is that you will be the principal speaker at a luncheon meeting on Tuesday, November 14. This will be in Washington's Sheraton-Park Hotel. You are at liberty to choose your subject. Our audience, I know, would welcome your remarks as to developments and plans of your country for nuclear power (including, of course, breeders and possibly fusion), or for the contribution of nuclear power in reducing pollution and in improving the environment, or for underground nuclear explosives to free energy resources or minerals.

We are most hopeful that you will be able to let us know in the very near future if you can accept our invitation for November 14, inasmuch as we are moving closer to completing the program for the conference. Perhaps you could direct your reply to Mr. Charles Robbins, Vice President and Executive Manager of the Atomic Industrial Forum, 475 Park Avenue South, New York, New York, 10016, U.S.A.

Helen and I and all the members of our visiting delegation still recall with pleasure our visit to your country last August, and we talk about it often. Your hospitality was outstanding, and

Andronik Petrosyants

- 2 -

February 17, 1972

this was a high point in the lives of many of the group.

As you know, our family has now returned to California, and I have resumed my academic duties as Professor at the University of California at Berkeley. I am teaching a freshman chemistry course which is actually rather hard work for someone who has been away from teaching so long. However, I am enjoying this and all of the other many academic duties.

I was very pleased to learn from Professor Millionshchikov that my book Man and Atom is going to be published in the Russian language by the "Mir" publishing house. I have agreed to write a short foreword for it.

I am looking forward to my visit to Moscow during the first week of next September, when I shall participate in the Symposium on the Chemistry of the Transuranium Elements at the Institute of Physical Chemistry. Perhaps we will have the opportunity to meet again at that time.

With warm regards,

Cordially yours,

Glenn T. Seaborg

GTS/sms

bcc: Charles Robbins

February 17, 1972

Mr. Howard C. Brown, Jr.  
9618 Carriage Road  
Kensington, Maryland 20795

Dear Howard:

I was delighted to receive your letter of February 14, 1972, and its enclosure brought back many nostalgic memories. You don't overstate the case at all. I don't know how many times I have had to cope with "knee-high" lecterns.

If the portable lectern should be located sometime, I probably could transport it to California on the way back from one of my trips. However, I guess I am not going to worry about it.

I am very sorry to have to miss your farewell party at the Bethesda Naval Officers Club on February 29, but my heart will be with you at that time.

It was good to see you in Berkeley, and I hope we will get together again before too long.

With warm regards,

Cordially,

Glenn T. Seaborg

GTS/sms

The luncheon places were all filled and a number of people came in after the lunch to make it a completely packed room of about 400 people. I was introduced by Mr. Arbuckle and spoke on "The Other Side of the Atom." My 27-minute presentation was followed by about 15 minutes of questions. The speech seemed to be very well received and the questions seemed to go quite well. Afterward, Emilio, Jack and I returned to the Lab.

The office staff had a goodbye party for Denise Richardson who is leaving to start work as an airline hostess.

I returned a call from Bob Main at 4:00 p.m. He wanted to confirm my approval of their shutting down the HILAC June 17-July 4. He noted that this would hit the outside users especially hard. I indicated that this might, however, add to the pressure we need to secure the necessary budget.

Saturday, February 19, 1972 - Lafayette - Coloma - Marysville

Helen, Eric, Dianne, Suki, and I drove to Coloma, via Placerville, to visit the site of the discovery of gold by James Marshall in January 1848. We visited the James Marshall Monument (where we had a picnic lunch), the Museum, and took the walking tour on the marked trail to see the points of interest. We saw the cabin, still standing, that James Marshall built and lived in.

We then drove to Grass Valley and Nevada City, but couldn't find a motel room. So we drove to Marysville, where we checked into Room 11 of the Town House Motel (on 9th Street between C and D Streets). We had an excellent dinner in the dining room of the Uriz Hotel (4th and A Streets) fronting Ellis Lake.

Sunday, February 20, 1972 - Marysville - Feather Falls

We had breakfast at Hy's Restaurant (9th and E Streets). Helen and Dianne fed the ducks at Ellis Lake after breakfast. Helen, Eric, Dianne, Suki, and I then drove to Feather Falls parking lot, the start of the Long Point Trail to Feather Falls. We hiked the 3.2 miles to the Feather Falls Lookout. The 640-foot fall is the third highest in the United States. Eric, Suki and I arrived a little earlier than Helen and Dianne and hiked on over to the top of the falls. Just as we were arriving, at about 1:00 p.m., we heard a scream and learned, upon arrival, that an 18-year-old boy had fallen down the falls, presumably to his death. We returned to the Lookout and joined Helen and Dianne for a picnic lunch. As we hiked back to the parking lot, we saw the victim's companion who was soaked with water--he had apparently climbed down to the bottom of the falls in a futile attempt to rescue his friend; he appeared dazed. When we returned to the parking lot at about 3:20 p.m., we saw a ranger and two companions setting out on motorcycles to traverse the trail to the falls to try to rescue the young man or recover his body.

We drove back to Marysville and again checked into the Town House Motel, this time into Room 2. We had dinner at Hy's Restaurant. After dinner we returned to our motel room and watched President Nixon's arrival in Peking, China, on TV at 7:30 p.m. We saw President

and Mrs. Nixon and Secretary William Rogers greeted by Premier Chou En Lai and other Chinese dignitaries.

Monday, February 21, 1972 - Marysville - Lafayette

We again had breakfast at Hy's. After breakfast, Dianne, with Helen's help, again fed the ducks at Ellis Lake.

We drove to Timbuctoo, where we visited the barely standing remains of the Wells Fargo Building, as our family had done in the summer of 1957. The building is in worse shape now. We did some digging, less than we did in 1957, and Dianne found a square-headed nail and some broken pottery. We then drove to nearby Smartsville, but found that Helene's Antique Shop, which we had visited in 1957, was closed.

We drove on to Grass Valley where we visited the Lola Montez House, the Mining Museum (which was closed) and Pelton Water Wheel, the Gold Discovery Monument on "Gold Hill" and the Empire Mansion and Mine, and Rowe Headframe. We had lunch in Denny's in Grass Valley and then returned to Rough and Ready to Helene's Antique Shop (which we had spotted on the way to Grass Valley but found closed). We found this was the same Helene C. Hurlburt that we had met in Smartsville in 1957. We bought a stereopticon (circa 1900), a velvet painting of a wide-eyed girl, a pink glass spoon bowl, a colorless and a blue eyeglass, a set of four chopstick holders (these last three from Timbuctoo), and a chopstick inlaid with mother of pearl (which Helene gave Dianne).

We then drove home via Colfax and Sacramento (caught in heavy traffic on the way), stopping to see Dave for a few minutes at Hammarskjold House in Davis on the way. We arrived home at 7:30 p.m. Eric drove the whole weekend.

Tuesday, February 22, 1972 - Berkeley

At 11:00 a.m., I gave a lecture on "The Transuranium Elements--the Superheavy Elements" to the Chemistry 1B class (Tuesday-Thursday section), illustrated by slides, in the Physical Sciences Lecture Hall. About 400 students were present; Sheila was as well.

I had lunch at the Faculty Club at a table with Joel Hildebrand, Ewald Grether, Lincoln Constance, Herbert Penzl, and others.

I mailed to Igor Pochitalin (USSR Academy of Sciences), who will translate Man and Atom into Russian, an introduction for the Russian edition (copy attached).

Eric, Suki and I took a hike to the water tank. We met our neighbor (in the Perlman's house), Yehuda Sherman, on the way.

Wednesday, February 23, 1972 - Berkeley

I drove Dianne to Stanley School this morning on my way to work in view of the rain.

INTRODUCTORY MATERIAL  
TO THE RUSSIAN EDITION OF MAN AND ATOM

This is an American book, written from the point of view of an American scientist who has been witness to, and participant in, some of the major events of the Nuclear Age. But the story of the atom is broader than this; the atom belongs to no single nation, but to all mankind. It is therefore appropriate that this story of "Man and Atom," which tells of the many ways in which nuclear technology can serve the needs and aspirations of the world's peoples, has now become available, in translation, to the Soviet people.

Although there are, unfortunately, still some influences that divide the Soviet and American peoples, the influence of science works to bring us together. The problems and challenges of science know no national boundaries, and scientists long ago learned that international communication and cooperation in science works to the benefit of all. Likewise, many of the programs described in this book, which can help to bring the practical benefits of nuclear technology to both industrial and developing nations, would be facilitated by international cooperation and collaboration. The Soviet Union and the United States, holding so large a share of the world's expertise in nuclear technology, can and should work together to play a leading role, both as catalysts and participants, in this important work. The exchange visits in 1971--of a group of Soviet nuclear experts to the United States, led by Chairman Andronik M. Petrosyants of the State Committee for Atomic Energy, and of a group of U.S. nuclear experts to the Soviet Union, led by myself--contributed a great deal to this



- 2 -

cooperation.

Science and technology have given our nations great power over life. It is possible for us to damage and destroy it, either quickly in nuclear war or slowly in neglect of our living environment. Alternatively, we can use the power of technology to improve the condition of life, for ourselves and for our fellow men. Our peoples must unite in their determination to avoid the course of destruction, to seek the goals of peace and life--elevation of the material well-being of all the world's peoples, preservation of a viable human environment, protection of our natural resources, pursuit of a lasting peace.

In order to provide the means and the tools with which to reach these goals, we must pursue the development of our sciences and technologies with vigor and with a spirit of world-wide understanding and cooperation. Toward these ends, the authors of Man and Atom dedicate this translated edition.

Glenn T. Seaborg

University of California

Berkeley, California

February 22, 1972

At 11:00 a.m., Peter Cross of Reynolds Securities in Detroit called me. He wanted my opinion as to whether KMS Industries of Detroit was applicable to the objectives of the Dreyfus Third Century Fund, which I thought they were insofar as they are devoted to the perfection of clean fusion power. I indicated that I would be willing to bring KMS Industries to the attention of certain analysts as a likely investment, but I could not comment on their progress or the potential of their future work on fusion reactors. I endorsed the new AEC Chairman's policy in supporting increased effort on fusion.

I had lunch in my office, then walked down to the campus for my Chem 1B section in Room A; the second midterm exam was given today.

From 2:30-4:00 p.m., I attended the session for the Ph.D. Qualifying Examination of Mr. Richard Craig Wilson. Present were Charles B. Harris, Chairman, W. L. Jolly, W. L. Hubbell, and T. Van Duzer of Electrical Engineering and Computer Science. We examined Wilson pretty thoroughly in the field of his research, electron spin resonance spectroscopy. We found him somewhat weak in fundamentals and somewhat flustered under questioning, but decided to pass him with an average or somewhat below average rating, with the admonition to his research director--Rollie Myers--that some more course work and study in fundamentals is indicated. After the exam, Hubbell reminded me that he was one of the Science Talent Search winners about ten years ago and that, in my role as judge, I had interviewed him in Washington at that time.

At 4:30 p.m., I attended a meeting of the Steering Committee of CHEM Study in the director's office of the Lawrence Hall of Science. Present were Arthur Campbell, George Pimentel and Dave Ridgway. We discussed ways of again approaching NSF to obtain their concurrence to terminate our relationship with them and have the project continue under the sponsorship of the University with the book and movie royalties to go to the University and the continuing expenses to be paid by the same.

Suki and I took a hike to the water tank.

Eric drove to Davis to have dinner with Dave, Monti Reynolds, a genetics professor, and others, and to pick up some fruit flies for his experiments in his biology class at Acalanes High School.

Thursday, February 24, 1972 - Berkeley - Oakland

I spent a couple of hours in the morning preparing my notes and putting my slides in order for my talk this evening at the dinner for Engineers' Week of the San Francisco Bay Area Engineering Council.

I called Ellison C. Shute about the announcement of his retirement as Manager of the AEC San Francisco Operations Office. He indicated that he needed a change in activity and had no specific plans at the moment but that he and his family would continue to live in Kensington, where they have been for the last 25 years. He told me that Bob Thorne, his successor, had been at SAN for about 1-1/2 years and is a fast learner.

I then called Robert Thorne to wish him well. We discussed the work on the SuperHILAC and the possibility of his visiting the hill at some time. He mentioned that he belongs to the American Chemical Society, though not yet to the California section.

I had lunch in my office.

At 2:10 p.m., Chancellor Albert Bowker called me to ask if I would be the Faculty Athletic Representative of the Berkeley Campus again. I told him I would need to think about this.

At 3:25 p.m., I called Stanley Schaefer, Editor of the W. H. Freeman Company in San Francisco. I described to him the contents and work to date on Nuclear Milestones. He was extremely interested in it, and will send their house man in the Physical Sciences, Bruce Armbruster, over.

In the evening, Helen and I attended the Engineers' Week Banquet of the San Francisco Bay Area Engineering Council at which scholarships were given to ten high school seniors. The dinner was held in Goodman's Convention Hall at Jack London Square in Oakland, and was preceded by a reception.

I sat at the head table next to Neil Munro, with Arthur H. Frye, Jr. and Anthony A. Braccia. Donald G. Larkin, Chairman of the Scholarships Committee, and the ten winners (Richard Ray Hill, Mary L. J. Johnson, Lawrence Key, Stephen Wai Seng Mark, Robert Bruce Marsden, Paul John Menchini, Dayna Jean Salter, Leon Williams, Anna Hing Tong Wu, and Frederick John Zustak) sat at a second head table behind us. The hall was full, with about 650 people.

Following some introductory remarks by Braccia, Frye and Munro, Braccia introduced me for my talk which they had entitled "Engineering ...A Better Tomorrow Through Technology." I began by explaining that I was going to use actual examples from the Lawrence Berkeley Laboratory and then gave a talk illustrated with slides describing some of the work on the hill. The talk was well received.

Following this, Larkin presented the scholarships. Richard Ray Hill--whose father, Ronald Hill, works in a plutonium processing section at the Lawrence Livermore Laboratory--won the first award, and he announced that he intends to come to Berkeley to major in Chemical Engineering.

Helen and I met many old friends, including Herb Crowle, who lived at the same boarding house as I (2416 College Avenue) during the fall semester of 1934 and at the Faculty Club the same time as I a few years later. We also met Howard Bloom, who is the Manager of Goodman's Convention Hall and who is a former resident (until his wife died recently) of Brown Avenue in Lafayette. I also met Mr. and Mrs. Lindgren; he is on the Planning Commission in Lafayette and is also interested in acquiring hiking rights to Lafayette Ridge.

Friday, February 25, 1972 - Berkeley - Orinda

At 10:00 a.m., I attended the meeting of the Superheavy Elements

group in the conference room of the HILAC Building. Ghiorso gave a progress report on the SuperHILAC--our argon beam is expected in a few weeks--and told us that Jose and Carol Alonso have agreed to come work with us. Almon Larsh described the circuitry of SASSY. Fred Goulding described Time of Flight (TOF) systems. Ghiorso described consideration involving using  $\text{Kr}^{86}$  as projectile to produce  $\text{Ge}^{82}$  as secondary projectiles (from a  $\text{U}^{238}$  target). Swiatecki described similar considerations with  $\text{Ge}^{76}$  and  $\text{Ge}^{74}$  as projectiles to make  $\text{Zn}^{74}$  and  $\text{Zn}^{72}$  as secondary projectiles (based on comparison with experimental results from  $\text{A}^{40}$  on  $\text{Th}^{232}$  by Volkov). These suggest that thick targets with catchers for the products will greatly increase the range of reactions and products. Nurmia described his ideas for producing secondary  $\text{He}^6$  by bombarding Au with  $\text{He}^4$  to be detected by  $\text{Au}^{197} + \text{He}^6 \rightarrow \text{Tl}^{202}$  (12d) + n.

From 12:00 noon to 1:45 p.m., the Program Committee of the Nuclear Chemistry Division met in my office. Present were Joe Cerny, Dick Diamond, Norman Edelstein, Al Ghiorso, Jack Hollander, Bernie Harvey, Earl Hyde, Ken Street, Art Poskanzer, Dave Templeton, Dave Shirley, Norman Glendenning, Stan Thompson, and Frank Asaro (guest). Iz Perlman was absent. Earl Hyde opened the meeting by calling for status reports on the three summer programs to be directed by Joe Cerny, Frank Asaro and Norman Glendenning. Ken Street reviewed our budget status. Copies of the General Accounting Office auditors' report about LBL to Chairman Schlesinger were distributed. Earl told the committee about John Rasmussen's plans to be here for two years.

At 2:00 p.m., Bruce Armbruster of W. H. Freeman and Company came in to look over the material I have for Nuclear Milestones, including the AEC booklet of Volume I and the Van Dykes for Volume II. We discussed the new work that would be needed, the financial arrangements, and possible copyright problems. He said that Freeman is definitely interested in publishing it and took the materials with him.

Dave, together with Monti Reynolds, called from Davis to give a report on his negotiations to get into graduate school at Berkeley, Cal Tech, etc. I told Monti that I might give a talk at Hammarskjold House next quarter, perhaps on Davis Picnic Day.

Helen and I attended the meeting of the Orinda-Moraga-Lafayette AAUW Branch in the auditorium of the Pine Grove School in Orinda at 8:00 p.m. I was introduced by Mary Louise (Mrs. Richard H.) Smith and spoke to a packed house of some 400-500 people on "The Peaceful Uses of Atomic Energy." I began by speaking generally on the peaceful uses--such as nuclear power from fission, nuclear fusion, nuclear energy and space, and the use of radioactive isotopes in industry, medicine, agriculture, the arts and humanities. I then went on to illustrate by describing the program of research at LBL, giving them essentially my talk "Atoms on the Hill," illustrated with slides. After the meeting, we stayed on for coffee, tea and cookies, and talked with people until about 10:00 p.m.

Saturday, February 26, 1972 - Lafayette

I did some shopping for garden and shop tools in the morning. In

the afternoon, Eric, Suki and I took a hike in Briones Regional Park, exploring the trails in the northwest corner. Bill and Lynne dropped by in the late afternoon, helped us to plant an oak tree (between the tennis court and the baseball back stop) and some rose bushes. They stayed for dinner and the evening.

Sunday, February 27, 1972 - Lafayette

I worked on my talks for the Alabama Section of the ACS and Yale University to be given on my forthcoming trip.

Eric, Suki and I took a hike in Briones. We hiked along the old Briones Valley Road, then to the eastern boundary, then back to our starting point partly along Crescent Ridge.

Monday, February 28, 1972 - Berkeley

Robley Williams returned my phone call about Chancellor Bowker's telling me of his resignation as Faculty Athletic Representative and asking me to take it over. We discussed his reasons for leaving and his plans and his analysis of the time required to do the job.

I held my office hour in Latimer Hall, after which I had lunch with the Chemistry Department faculty in the O'Neill Room of the Faculty Club. I arranged with Calvin to have him give me copies of some of the slides he is going to use for his talk on Solar Energy at Rutgers University early in April. I'll use these for my talk on energy to the Electrical Engineering Colloquim on April 4.

I taught my Chem 1B section in Room M at 1:00 p.m.

Ghiorso called at 3:00 p.m. to tell me that he had just heard, through Epple, that the Commission itself had just taken the BEVALAC out of the 1972 supplemental budget request; he will investigate this further.

I attended the regular Monday Nuclear Chemistry Seminar to hear Arthur Poskanzer talk on "The Orsay On-Line Mass Spectrometer Experiment at CERN."

Eric, Suki and I took a hike to the water tank.

Tuesday, February 29, 1972 - Berkeley

I called Justin Bloom in Washington just before 9:00 a.m. He told me that he has been offered a position, which he will probably take, as Abe Friedman's Assistant in International Programs. I asked if he would arrange a lunch for me with Commissioner Doub for March 7, which he said he would do. He indicated that he knew very little of the background behind the BEVALAC's being taken out of the supplemental.

Adrian Kragen called me from the Law School on the campus, inviting me to speak at a seminar on Law and Technology in the Law School, on how decision-making is done in the AEC in, for example, the disposal of nuclear waste. I declined because of my schedule and also

February 29, 1972 (con't)

in light of my present policy to steer clear of debating in this area and to reassociate myself with the University. We also discussed the Faculty Athletic Representative position and the state of affairs in campus athletics.

I talked with Norman Kharasch in Santa Monica. I told him I couldn't accept his invitation to become an Advisor to the Intra-Science Research Foundation Fellows Program but would be willing to review their NSF proposal.

Justin Bloom called me back at 11:15 a.m. to confirm my lunch with Commissioner Doub at the Metropolitan Club on March 7. He read to me the Physical Research statement for the authorization hearings and said he would check further on the reprogramming of funds from Chemistry into Medium-Energy Physics.

At noon, I had lunch with Stephanie Mills and Jerry Udelson in the cafeteria. The purpose was to discuss the Information Nets project of Robert Theobald. They tried to describe this to me as an effort to bring people together through the mail in the exchange of pertinent information in today's world, and they labeled it as an essentially altruistic effort on Theobald's part. I indicated that, on this basis, I would probably participate in a limited way by returning the questionnaire indicating my desire to continue receiving the information.

From 1:30-2:15 p.m., I met with Owen Chamberlain and Arthur Gill in our role as the Chancellor's Ad Hoc Committee to review the promotion of Ronald R. Ross from Associate Professor III to full Professor I (physics), for which I was appointed Chairman. We decided, on the basis of the information available to us, that Ross--although he has not had a distinguished career--is worthy of promotion on the basis that he has made adequate progress. Gill told me that he was a member of the graduating class of 1959 and hence attended the commencement exercises over which I presided and during which I handed him his diploma.

Charles Susskind called me from the University President's Office at 2:15 p.m. He said that the Regents will be discussing the importance of research at their March 17th meeting in Los Angeles and that he would like me to be there at 9:00 a.m. to make a presentation on behalf of the physical sciences (as one of three or four faculty plus Bill McElroy). I said it would be very difficult for me to do this, since I must be here for a noon meeting with visitors from the east coast. Either he or Angus Taylor may call me back about this.

At 2:30 p.m., I called Stanley Greenfield at the Environmental Protection Agency in Washington. I described our creation of an environmental chemistry group at the Lab, and we discussed my inquiry about the EPA's establishing a center here or using us as a special laboratory. He indicated that he would be happy to see Jack Hollander and Andrew Sessler when they are in Washington in a few weeks.

I called Edwin McMillan (LBL Director) to discuss support for the BEVALAC. He informed me that the National Accelerator Laboratory got 200 Bev at 11:00 (2:00 EST) this morning, though he didn't know the details of the beam.

Suki and I took a hike to the water tank. Helen felt ill today, so Eric and Dianne fixed us TV dinners. The school bond issue failed to carry in Piedmont today, so Lynne and Bill won't have to move from their cottage on the Jasaitis property which would have had to be sold to the school district had the bond issue carried.

Wednesday, March 1, 1972 - Berkeley

I had lunch in my office, after which I taught my Chemistry 1B section in Room A of Latimer Hall.

At 4:00 p.m., I met with Earl Hyde and Norman Glendenning to discuss a possible summer seminar in theoretical nuclear chemistry. We decided, despite our budgetary limitations, to invite three people (including Walter Greiner) for six weeks, and Burkhard Fricke for two weeks.

Suki and I took a hike to the water tank. Eric had gone to Acalanes High School to attend a self-prepared dinner with the foreign language students and teachers. Lynne and Bill came by to participate in a surprise birthday party for Helen. They brought a cake with candles and we gave her as gifts a copy of Herman Wouk's latest book, The Winds of War, a scarf, daffodils, and a tiny jigsaw puzzle.

The Batavia accelerator reached 200 Bev at 2:08 p.m. EST today.

Thursday, March 2, 1972 - Berkeley - St. Louis

Helen drove me to my office at the Lab, where I spent the morning getting out a number of letters and making last-minute preparations for my trip east. One of the letters was to Ross Reagan, Superintendent of Schools of the Acalanes Union High School District, to inform him of the outstanding job Eric's French teacher, Mrs. Camille Connery, is doing. Beyond her regular teaching duties and on her own time, she has been giving the students an advanced French class which they could not have received in any other manner.

Ed Lofgren called me just before noon to tell me about his participation in the hearings in Washington. He reported that the 1972 Supplemental died in the Joint Committee, and described his conversations with Bauer, Swiller, and Ed Bowser.

I had lunch in my office with Sheila, after which she drove me to San Francisco Airport in her car. I caught TWA Flight No. 78, leaving at 3:00 p.m. and arriving in St. Louis at 9:50 p.m.

I was met by Washington University students Michael Levine, Lynn Wexler, and Jane Kassal, who drove me to the Clayton Inn, where I checked into Room 712.

Friday, March 3, 1972 - St. Louis - Washington

I had breakfast in the dining room of the Clayton Inn at 8:00 a.m. with Michael Levine, Lynn Wexler, Jane Kassal, and Jackie Jacobs.

After breakfast, at 9:00 a.m., they escorted me to Room 206 Crow Hall, where I talked to Professor Richard E. Norberg's class on Quantum Physics about the transuranium and superheavy elements and answered questions in this and related fields. (Norberg is chairman of the Department of Physics.)

At 10:00 a.m., I went to Dave Lipkin's office in the Chemistry Building, where I met with Dave, Art Wahl, Sam Weissmann, and Bob Johnson; we talked mainly about the trials and tribulations of teaching.

At 11:00 a.m., I went to Graham Chapel where I met King McElroy and Catherine Pearson of Washington University's Alumni House Information Office in a small side room. Here I was interviewed on tape by Bob Hardy of CBS radio station KMOX, and after that, by phone by Jerry Curry of the St. Louis Post Dispatch on the general subject of my afternoon talk on the role of science and technology and also on the peaceful uses of nuclear energy.

At noon I went with Lynn and Michael to the cafeteria in Wohl Center where I had lunch with many students and some of the participants in the Washington University Student Symposium, "Man Against Himself--Future Realities." Among those I met were Kenneth F. Lorch and David C. Goldman, co-chairman of the Student Symposium Committee, and Symposium participants John Hughes (Editor of the Christian Science Monitor), Nathan Hare (sociologist and educator, formerly of San Francisco State College) and Paulo Soleri (architect and developer of the town of Acrosanti in Arizona). I also met and talked to many students.

After lunch we went to Graham Chapel where, at 2:00 p.m., I spoke in the Chapel hall on "The Role of Science and Technology." I was introduced by John Hughes and at the end of my talk, Joseph Klarmann (Professor of Physics) made a scheduled five-minute commentary which was friendly. (He is doing research on the identification of super-heavy elements in cosmic rays.) There then followed a thirty-minute period of questions and answers; these were concerned with the general content of my talk and with the safety and other aspects of nuclear power and the role of other sources of power.

At 3:45 p.m., I went to the formal lounge of the Women's Building where I answered further questions, covering a wide spectrum in the role, administration and future of science and technology, for about 30 minutes. The rather large group was very interested and posed many good, challenging questions.

My talk was broadcast directly over radio station KDNA and taped for later broadcast over radio station KFRU (Washington University station) by Don Schleuter of Campus Publications and Mike Baldrich.



Michael and Lynn then drove me to the St. Louis airport where I boarded TWA Flight No. 440, which left at 5:40 p.m. and arrived at National airport in Washington at 8:15 p.m. I took a taxi to our home at 3825 Harrison Street, where I met Jane and Pete and spent the night.

Saturday, March 4, 1972 - Washington

I had breakfast with Jane (Pete had gone to work), after which I caught a bus to the Shoreham Hotel. I went to the Empire Room where I met Ted Sherburne and Dorothy Schriver. Between 10:00 a.m. and 1:30 p.m., in my role as judge, I interviewed each of the forty winners of the 31st Annual Westinghouse Science Talent Search.

I then had lunch in the Tudor Room with the winners and staff. I sat at a table with Richard Baird, Jan Agosti, Alan Grenadir and other winners, and Owen Basil (Head of science fair activities at Science Service) and Mrs. Schriver's older son. I also met Mrs. Shriver's son Peter whom I had written last month in connection with an essay he wrote about me.

After lunch, the judges went to the Executive Room to pick the winners. The judges were Dr. David Axelrod, who acted as chairman, Dr. James Hummel, Dr. Russell Johnson, Dr. Alan de Silva, Dr. Stuart Hauser, and I. We picked the following to win scholarships:

1. Nina Felice Tabachnik, Little Neck, N.Y., \$10,000
2. Tony Giordano Horowitz, Long Island City, N.Y., \$8,000
3. Susan Eva Landau, Bronx, N.Y., \$8,000
4. Donald Jeffrey Solomon, Houston, Texas, \$6,000
5. Holly Hyde Birdsall, Houston, Texas, \$6,000
6. Alan Stuart Grenadir, Queens Village, N.Y., \$6,000
7. Jonathan Gershenzon, Los Angeles, Calif., \$4,000
8. Dora Yuen-Kie Lee, Long Island City, N.Y., \$4,000
9. Walter Philip Schiefele, Philadelphia, Penn., \$4,000
10. Denise Margaret Canfield, Franklin Park, Illinois, \$4,000
11. James Laurence Michel, Portland, Oregon  
(first runner-up, \$250)
12. David Albert Rudman, Bloomington, Indiana  
(second runner-up, \$250)

The remaining contestants received Westinghouse Science Awards of \$250 each. This is the first time that a girl has won first place and the first time so many girls have placed so high.

After we finished our selections, I returned to the Empire Room where the public was viewing the forty exhibits. I met and talked to, among others, Edward Giller and his son, Jerry and Jo Tape and their son Tom, Fred Reinholdt (in charge of energy study in the Office of Science and Technology), Paul McDaniel, Clancy Ohlke and his two sons, Mr. and Mrs. Dale McFeatters (of Westinghouse), and Robert Abel (Director, National Sea Grant Program, NOAA).

Tape feels that the influence of PSAC is considerably diminished. McDaniel feels confident that we'll get the BEVALAC, said that Chairman Schlesinger regards Cap Weinberger as a friend to California projects; he said that the removal of \$700,000 in the fiscal 1973 budget from chemistry to physics is the result of a phone call from Ed David to Schlesinger. I discussed with him the possibility of the physics division of the Division of Research giving partial support to the SuperHILAC operational budget and he said he would look into this; he said that Bill Wenzel has discussed with him the possibility of Berkeley High Energy Physics giving some support to SuperHILAC operations; Ohlke told me he had had some trouble clearing a spot for Stan Schneider in NSF.

Axelrod drove me to Harrison Street where I had dinner with Pete and Jane.

#### Sunday, March 5, 1972 - Washington

I had breakfast with Jane (Pete had gone to work).

At 10:30 a.m., Stan Schneider picked us up and drove us to his house in Potomac where we joined Renee and a group to go hiking. The group consisted of: Stu and Sue Low (of the State Department, recently returned from a three-year stay in Brazilia) and their three sons Stu, Rodney and Peter; Bob and Joel Ann McFarren and their kids David, Christa and Julie; Mr. and Mrs. Arthur Lambert (of CIA) and their kids Catherine and Christopher; and Bill Young (a French student of Renee's) who came with the Lows.

We drove in three cars up Highway 70-S to Frederick, then on Highways 40 and 66 to Smithsburg, then Highways 64 and 491 to Ritchie Road and left on this to our starting place near Devil's Racecourse Shelter. We had a picnic lunch at the Shelter, then hiked north to High Rock (which is somewhere between Pen Mar and Raven Rock Hollow). At High Rock we had a marvellous view west of a farming valley at the northern boundary of Maryland.

We then rode home with the Schneiders, arriving at 6:00 p.m. Pete came home from work at the Washington Psychiatric Institute at 6:30 p.m. and we all had dinner together. After, I met their roomer, Larry Cohn (a lawyer), and his girl friend. We all watched "Elizabeth R" on Channel 26. (The other roomer is still Barry Genessen.)

#### Monday, March 6, 1972 - Washington

At 9:00 a.m., Jeremy and Mrs. Stone picked me up. Jeremy (Director of the Federation of American Scientists) drove me to the Federation headquarters (203 C Street, N.E.), dropping Mrs. Stone at

March 6, 1972 (con't)

her place of work on Connecticut Avenue on the way. We discussed his invitation to me to serve on the Board of Sponsors of FAS and I said I would be glad to advise him and the Federation privately, but didn't want to become a Board member at this time--later perhaps, at a time when I would let him know. He said he understood and was glad to accept this suggestion. He said that the FAS is now advocating a national policy of no first use of nuclear weapons for the U.S. and has found a number of senators to support this. With respect to a Comprehensive Test Ban Treaty, he said AEC Chairman Schlesinger says inspection is not the issue, but the need to test is. I suggested FAS consider provisions allowing limited reliability testing and setting an effective date for the treaty a year or two ahead to allow completion of ongoing test programs so as to forestall opposition. He said Schlesinger had called FAS opposition to the Amchitka test "disingenuous" and "irresponsible," but had not answered Stone's letter protesting this. I suggested to him that FAS study its position on nuclear power and separation of AEC regulatory and promotional function very carefully before taking a stand; I also summarized pro and con arguments for use of nuclear explosives to increase natural gas production. I then suggested that FAS consider getting into future studies and he will get in touch with Ed Cornish of the World Future Society. I commended him for his stand opposing AAAS meeting disruptions. He feels that Jack Anderson's disclosure of the Justice Department's role in the investigation of ITT and their telling of lies in connection with the ITT donation of funds for the next Republican National Convention will assume the proportions of a national scandal.

I took a taxi to the University Club (1135 Sixteenth Street, N.W.) where I read my meeting material until noon, phoned Sheila to be brought up to date on my mail, etc., then attended the annual meeting of the Board of Directors of the World Future Society in the Governors Room. Charles Susskind again called me (from Berkeley) to say he has talked to Vice President Chester McCorkle and they want me to reconsider my decision not to talk on physical research at the UC Regents meeting in Los Angeles on the morning of March 17; I told him I would be there to talk to the Regents.

I attended the luncheon meeting of the Board of the World Future Society which lasted until 3:15 p.m. Present were Chairman Rowan Wakefield (of the Aspen Institute) who presided, Arnold Barach (Senior Editor of Changing Times), Barbara Hubbard, Carl Madden (Chief Economist of the U.S. Chamber of Commerce), Charles Williams (of the Washington office of the Stanford Research Institute), Michael Michaelis (of Arthur D. Little Co.), President Edward Cornish, and Secretary-Treasurer Peter Zuckerman.

Cornish gave a very imaginative future plan for the Society in his President's report--this plan will be considered in future meetings of the Executive Committee and will be circulated for comment. The Executive Committee will also consider a way to meet costs, possibly with some phased way of raised dues. The next annual meeting was set for 6:30 p.m., Tuesday, March 6, 1973, subject to my schedule. A committee consisting of Charles Williams and Mike

Michaelis was appointed to meet with a possible corresponding AAAS committee to consider cooperation with AAAS. Barbara Hubbard reported on the forthcoming SYNCON meeting to be held at Southern Illinois University May 17-21. Cornish said he will give or send me a copy of Dennis Meadows' Club of Rome book, The Limits of Growth.

Cornish drove me home. I called Betsy McFadden to discuss the status of the writing on "Travels in the New World."

Pete, Jane and I went to the reception and dinner of the Thirty-First Annual Science Talent Search at the Shoreham Hotel--the dinner was in the Regents Ballroom and the reception was across the hall. Here I met many of my AEC friends, including the Justin Blooms, Stan Schneiders, Julie Rubins, Robert Hollingsworths, Ed Gillers, Ed Brunenkants, and John Vinciguerra. Brunenkant is unhappy with the way the new chairman is treating him and thinks it is retribution for his loyalty to me.

At the dinner, presided over by Ted Sherburne, I presented a certificate to Leonard Carmichael, bestowing on him the title of President Emeritus of Science Service, and introduced Lewis Branscomb who spoke on "Metrology, The Unexpected Pleasure." At the beginning of the dinner, Dorothy Schriver introduced each of the forty winners who came on stage, and at the end Dr. David Axelrod announced the ten scholarship winners and two alternates who came on stage. I then joined the winners and others in a nearby room where a number of pictures were taken. After this, I joined Pete and Jane at a reception in Dale McFeatters' suite where we had further opportunity to talk to many of our friends. Albert Gore told us that the ITT-Justice Department affair had the potential of being a scandal of the proportions of the Harding Administration's Teapot Dome affair.

Tuesday, March 7, 1972 - Washington - Huntsville, Alabama

I had breakfast alone--Pete and Jane were still asleep. Trudy Feldman called to obtain my comments on the STS winners for use in the newspapers that she services.

I took a taxi to the Metropolitan Club where I had lunch with Bill Doub. I told him about our Environmental Research group and our hope to work for AEC Regulatory on the preparation of impact statements, etc. He thought this would be a good idea and we agreed that Hollander and Sessler would phone him for an appointment to see him and Manning Muntzing, Director of Regulation. Doub told me he expects to remain as an AEC Commissioner for about three years. He said he would arrange for a briefing of me in Berkeley so I could be up to date on AEC activities in preparation for the questions that are posed to me in speaking engagements, interviews, etc. He said he has prepared legislation with the help of General Counsel which would authorize interim licensing to help somewhat in the reactor licensing dilemma.

I called the Lab and talked to Sheila about office matters and with Hollander about his appointment with Doub. I took a taxi to National airport where I boarded United Airlines Flight No. 591, leaving at 4:00 p.m. and arriving in Huntsville at 4:45 p.m.

I was met by Professor Samuel P. McManus of the Department of Chemistry, University of Alabama at Huntsville, who drove me to the Carriage Inn Motor Hotel, where I checked into room 260.

I went to the ballroom area where I was first interviewed by Jack Hartsfield of the Huntsville Times on the nuclear power controversy, then attended the pre-dinner reception. Here I met Dr. Ronald McNutt (Chairman of the Chemistry Department at Athens College), Charles Coburn (head of the Chemistry Department at Auburn College), Mr. Younger (City Attorney of Huntsville), the student honorees Lee Riggins (Alabama A & M University), Michael Mullen (Athens College), Merlin Kelsick (Oakwood College), Larry Fite (University of Alabama at Huntsville), Stephen Giles (a bright junior high school student), Dr. Martin Manger, Dr. and Mrs. William Stephens, Dr. Sharp of the University of Manchester, and many others. I sat next to McNutt and Mrs. Stephens at the head table at dinner.

After dinner, Younger--on behalf of the mayor of Huntsville--presented me a Certificate of honorary Citizenship of Huntsville. McManus then presented awards to Riggins, Mullen, Kelsick, and Fite and a special award to Coburn. McNutt then presented the 1972 Madison Marshall Award to me, after which I responded with thanks and gave my talk "The Transuranium Elements," illustrated with slides.

I then talked to a number of people, after which I retired to my room, where I saw on TV the results of the New Hampshire primary which Ed Muskie won over George McGovern, about 50% to 30%, and Richard Nixon over Pete McCloskey about 70% to 20%.



Dr. Ronald McNutt, GTS, Dr. Charles B. Colburn - Madison Marshall Award Dinner - 3/7/72.

Wednesday, March 8, 1972 - Huntsville - New York

I had breakfast in the motel coffee shop with McManus, Coburn and Dr. Sharp (a visiting professor at Auburn College from the University of Manchester).

Dr. Ernst Stuhlinger picked me up at the motel at 8:30 a.m. and drove me to the George C. Marshall NASA Space Flight Center. (Stuhlinger worked on the interaction of neutrons with beryllium in the 1930's and on a possible uranium-graphite reactor early in World War II, but they erroneously found graphite unsuitable because of dysprosium impurity.)

We went to the office (room 914) of Dr. Eberhard Rees, Director of the Space Flight Center in Building 4200, where I met with Rees, Stuhlinger and Colonel Ed Mohlere, who briefed me on the center. After this, I was taken on a tour of the Center.

Stuhlinger and Mohlere took me to room 815 where I received a briefing on the Marshall Space Flight Center Program by Mohlere, Jim Downey and others. We then went to the Quality and Reliability Assurance Laboratory in Building 4708, where Edward S. Schorsten (protocol branch) joined us and we were shown the Apollo Telescope Mount (ATM) by Dr. Dornbos, Dr. Hughes and others. The ATM, a part of the Sky Lab to be launched on April 30, will measure extreme ultraviolet and X-rays. In another part of this building, we saw the ATM Motion Simulator and Micro Circuit Applications in the Astrionics Laboratory. Here I met Kruidemer, Blanton and Vick, and in the Microelectronics Lab, Taylor, Anderson, Holliday, Holles, and others. I saw some remarkable circuits, now capable of having up to 10,000 devices (transistors) in each small "chip." They gave me a chip with 500-600 MOS (Metal-Oxide-Silicon) devices in the form of a tie clasp and a more advanced silicon-ruby chip with 2,000 devices.

We then went to the General Purpose Laboratory Module of the Astronautic Laboratory in Building 4619--this is a second-generation Sky Lab which might be launched in about ten years. Heimborg and Waters showed us around and took us on a tour of the Module. Next we went to the Process Engineering Laboratory (Building 4706) where we saw the Neutral Buoyancy Simulator--a huge (1,400,000 gallon) water tank in which zero gravity is simulated by astronauts as part of their training process. Here I talked to Pete Conrad and Joe Kerwin (who has medical training)--they will be on the three-man crew that will join up with the Sky Lab for a 28-day stay soon after it is launched. Pete told me about the eye flashes he saw while lying in the dark during the Apollo 11 Mission--he said these were of two distinct kinds, large stars and more limited single flashes, and he was the first to deduce that they are seen individually in either eye, not simultaneously in both eyes. I described to him the Berkeley eye experiments with nitrogen ions at the Bevatron and the plans to build a BEVALAC. Joe described to me the Apollo suits that they will wear on their forthcoming mission and in the Neutral Buoyancy Simulator which they were about to enter.

After the tour, I attended the regular staff luncheon in room 915 of Building 4200. Those present were: Dr. Eberhard Rees, Director;

Dr. William Lucas, Deputy Director Technical; Mr. Richard Cook, Deputy Director Management; Mr. Erich Neubert, Associate Deputy Director Technical; Dr. Leslie Ball, Director Safety; Mr. Dave Newby, Director, Administration and Technical Services; Mr. Jim Shepherd, Director, Program Management; Mr. Bart Slattery, Director, Public Affairs; Mr. Jim Downey, Deputy Director, Program Management; Mr. Ludie Richard, Deputy Director, Science and Engineering; Dr. Hermann Weidner, Director, Science and Engineering; Col. Ed Mohlere, Assistant to Director; Mr. Woody Bethay, Director, Center Plans and Resources; Mr. Chauncey Huth, Deputy Director, Administration and Technical Services; Dr. Ernst Stuhlinger, Associate Director for Science.

We discussed public relations problems in space and nuclear energy areas, dissent in universities, etc., and I gave a short resume of the status of nuclear power and the breeder reactor at the request of Stuhlinger. After lunch, Stuhlinger, Jerome Bucher and I visited in Stuhlinger's office, after which Stuhlinger, Schorsten and I returned to the Neutral Buoyancy Simulator to watch Conrad and Kerwin in action in the Simulator as part of their training process.

Then the three of us went to the Huntsville airport where they saw me off on United Airlines Flight No. 332. I left Huntsville at 3:00 p.m. and arrived at Newark airport at 6:20 p.m. I took the airlines bus to the Westside Terminal (42nd Street and Tenth Avenue), walked to the Chemists' Club, and checked into Room 630. I took a walk along Broadway amidst light snow flurries.

Thursday, March 9, 1972 - New York - New Haven

I took a taxi to the General Motors Building (767 Fifth Avenue), where I had breakfast with a group from the Dreyfus Third Century Fund at the headquarters of the Dreyfus Corporation on the 35th floor.

Present were Vernon Jordan, Jr., Director; Jerome Hardy, President of the Fund; Vice Presidents David Burke and David Bronheim; Secretary Michael Glass; Outside Counsel Leonard Leiman; David Burke's secretary, Margaret Evans; General Counsel of the Dreyfus Corporation, Lawrence Greene; and Special Research Staff members James Cunningham, Jeffrey Friedman, Marcella Fava, Darryl Fagin, and Laura Parmer. (Michael Taylor was absent.)

Jordan and I were briefed on the progress on underwriting the Fund and on general progress and plans for the next meeting of the Directors on March 20, which Jordan and I cannot attend due to scheduling difficulties. At the end of the breakfast, I had another cup of tea with Burke, Glass and Bronheim during which we mainly discussed the implications of Tuesday's New Hampshire election and the ITT case. The feeling was that the ITT case presents a serious problem for the Republican party--the question of whether McLaren's judgeship was a reward for his role in the settlement was raised.

I rode with Ernest Martin, Howard Stein's driver, to Grand Central Station, where I caught the 11:05 a.m. train to New Haven, arriving at 12:55 p.m. I was met by John Sibert, who drove me to the Sterling Chemistry Laboratory at Yale University, where we went up to the 4th floor to join John Rasmussen, Dan Miller, Lew Keller, John

Huizenga, Jose and Carol Alonso, and others for a sandwich lunch. Then we went to the auditorium where John Sibert opened the Herbert S. Harned Symposium on the Superheavy Elements by introducing Rasmussen, who spoke on "Pathways to the Superheavy Elements." After an intermission, Rasmussen introduced me and I gave my talk "Status Report on the Transuranium Elements," illustrated with slides and followed by questions. A large audience was present.

After the afternoon program was completed, I attended a reception in the Yale HILAC Building. Among those present was Bela Laubengayer, who worked at the Lawrence Berkeley Laboratory around 1958.

I then went to the New Haven Lawn Club, where I had dinner with a group consisting of John and Louise Rasmussen, Bart and Pat Jones, Dr. and Mrs. O. Sinanoglu (he obtained his Ph.D. with Ken Pitzer in the late 1950's), John Sibert, Lars Onsager, Jack Faller, John Huizenga, Lew Keller, and Dan Miller. After dinner, the Rasmussens, Sibert, Faller, Huizenga, Keller, Miller, and I dropped by the Onsagers' home where Lars and Mrs. Onsager served drinks.

Sibert and Faller then drove me to the Park Plaza Hotel, which refused to honor my reservation, so we drove to a nearby Howard Johnson Motor Lodge where I checked into Room 812. I learned that this motel had opened just four hours earlier.

Friday, March 10, 1972 - New Haven - Washington

I had a late breakfast in the new motel restaurant, then read my AAAS meeting agenda and material until Sibert picked me up and drove me to Sterling Chemistry Laboratory. I called Sheila to discuss my correspondence, etc. I then had lunch with a group of Symposium participants, including Robert Beringer, in the cafeteria on the 12th floor of the Kline Biology Tower.

Before the afternoon session, I talked to Keller about his sending a radiochemist to work with us at Berkeley--he is discussing one of Don Ferguson's extraction chemistry experts with Bob Silva. Jose and Carol Alonso said they expect to start at Berkeley at the end of May, with a trip to locate housing before that. He wants Ghiorso to send him some computer manuals, etc.

I next attended the afternoon Symposium where Huizinga talked on Shell Effects on Superheavy Elements. This was followed by an intermission during which I talked informally to a number of graduate students. We then reassembled in the Auditorium where we heard Keller speak on "Predictions of Chemical and Physical Properties of Actinide and Superheavy Elements." Element 114 should be divalent and about as active as lead, 113 should be univalent and like silver (soluble in ammonia and excess chloride ion), 115 should be univalent, 117 trivalent, 116 divalent, 112 not like mercury.

I left the Symposium at 4:00 p.m.; Sibert drove Dan Miller and me to the New Haven airport where Miller and I caught Allegheny Airlines Flight No. 482 which left New Haven at 5:10 p.m. and arrived at Washington National Airport at 7:10 p.m. Miller drove me to our Harrison Street house on his way to his home in Bethesda. Here I met



Jane and her mother Shirley, who is visiting for a few days. Pete was at work. I had dinner with Jane and Shirley and Larry Cohn. David called from Davis to say he has been admitted to graduate work in the Department of Zoology at Berkeley!

Saturday, March 11, 1972 - Washington

I took a taxi to the AAAS Building (1515 Massachusetts Ave., NW) to attend the meeting of the Board of Directors. We started late, at 10:00 a.m., waiting for a quorum to arrive. Although one was not yet present, we started unofficially on some small items. Mina Rees (who presided), Bill Golden, Dick Bolt, Ward Goodenough, plus Bill Bevan, Phil Abelson, Catherine Borrás, and Dick Trumbull were present. Phyllis Parkins arrived at 10:15 a.m., which gave us a quorum (six members), so the meeting officially started.

We adopted a resolution expressing the desire of the Board that the 1972 election of the officers of AAAS be by polling the entire membership; attorney O'Brien will be consulted, the Council may be polled if O'Brien suggests, and the Board's action will be described in the AAAS Bulletin. Barry Commoner entered the meeting at 11:00 a.m. At 11:15 a.m., we had a meeting with Mary Gray, Linda Harris and Teresa Tellez to hear an explanation of their proposal for the establishment of an AAAS Office for Women's Equality. I spoke in favor of it.

We all had a buffet lunch in the neighboring lunch room, at which time Lew Branscomb joined us. We continued discussion of the question of women's equality in science and decided to create an Ad Hoc group, working with Bevan, to make recommendations for an AAAS program.

At 2:45 p.m., Gerard Piel, as Chairman, made a report on the recommendations of the AAAS Committee on the Public Understanding of Science; Jim Butler of AAAS staff accompanied Piel.

The Board discussed its relationship to Science Service and approved a motion to continue to designate Board members to Science Service provided these could be regarded as nominations and not appointments. For the next (1972) appointment, to fill the position held by Wallace Brode whose term expires next month, the Board nominated Deborah P. Wolfe, Linda Harris and John T. Dennis. Golden raised the question of conflict of interest should a merger of Science Service with AAAS again be considered, and I said I would be glad to resign from one or the other Board should this arise. Golden asked about the financial status of Science Service and I described the present situation as very sound. After discussing a few more items, we adjourned for the day and went to the Cosmos Club for a reception and dinner.

Present were all the Board members attending the meeting, except Commoner and Branscomb, plus Mrs. Caryl Haskins, Mrs. Leonard Rieser, Mrs. Bevan, Mrs. Abelson, Congressman and Mrs. Charles Mosher, Congressman and Mrs. Mike McCormack, and Dr. and Mrs. Dillon Ripley. After dinner, the Abelsons drove me home to our Harrison Street house.

Sunday, March 12, 1972 - Washington - Fairfax - Lafayette

I took a taxi to the AAAS Building where, at 9:00 a.m., I attended the continuation of the Board meeting. Bevan gave his Director's report. He said Barbara Culliton has joined the "News and Comment" staff. He said he has in mind having a scholarly history of the AAAS prepared and has talked to Hunter Dupree and others; a start in this direction will be a book of AAAS presidential addresses since 1920. There was a rather surprising discussion questioning the wisdom of the AAAS accepting the grant from the NSF on the public understanding of science; I tried to defend Bevan's action in negotiating this grant. We discussed the proposed office of international affairs, its funding difficulties, and I suggested we should consider proceeding with our own funds. I mentioned Herman Pollack's letter to me of March 2 suggesting a State Department session on international science at the December AAAS meeting. There was a two-hour discussion of the 1969 AAAS Board Resolution to expand the scope and the size of the AAAS; this will be discussed in detail at the Arden House meeting, May 27-30.

We all had a buffet lunch in the lunch room; I sat at a table with Leonard Rieser, Mina Rees and Bill Bevan.

Soon after the start of the afternoon session at 2:00 p.m., Larry Cohn and Jane picked me up and drove us to James W. Robinson, Jr. Secondary School on Sideburn Road in Fairfax, Virginia, where we attended the dedication of the school. Pete didn't come because he was working on his application to Antioch (Washington, D.C.) Law School. James W. Robinson, Sr. gave the dedicatory address, using the Third Revolution theme and quoting Eric Walker's famous commencement address. William B. Wrench, Chairman of the School Board, introduced the members of the Robinson family, including me. Among those present to whom I talked were Alice (Mrs. James W. Robinson, Sr.--my cousin), Joanie (Alice's daughter) and Tom Yolken and their little daughter Lauren, Jim's son Tay, Jim's sister, and Robert and Louise (my second cousin) Price. We also met Helen (Mrs. Don, Jr.) White--Earl Hyde's sister--and her daughter Barbara. (Don White is just starting as Washington representative of California schools). Barbara and her friends showed Jane, Larry and me around the school, which is rather remarkable in that it is divided into five sub-schools. We attended the reception where refreshments were served.

Larry and Jane drove me to Dulles Airport where I boarded United Airlines Flight No. 57 which left at 6:20 p.m. and arrived in San Francisco at 8:30 p.m. Helen met me and drove me home to Lafayette. She told me that Uncle Henry had died yesterday in Seattle.

Monday, March 13, 1972 - Berkeley

Upon my return to my office in the Lawrence Berkeley Laboratory, I went over my correspondence, etc., with Sheila and had a session with Earl bringing me up-to-date on happenings during my absence.

I held my office hour from 11:00 a.m. to noon in my Latimer Hall office (room 446), had lunch with the chemistry faculty in the Howard Room of the Faculty Club, then taught my chemistry section in Room M.

Eileen Eiland returned to work from maternity leave today.

I talked with Bruce Armbruster of W. H. Freeman and Company by phone at 3:15 p.m. He told me that Freeman wants to proceed with publishing Nuclear Milestones as a low-cost (\$4-\$6) cloth edition. It will be heavily advertised in Scientific American. They will consider doing a paperback after seeing how the first year's sales go. We discussed some minor changes that would be necessary and the copyright status, which he has yet to investigate. He said that he had talked with Stanley Schaefer (the President) about the index. They want us to do it and will reimburse us for the cost. He is mailing the contracts to me.

Eric, Suki and I took a hike to the water tank. Lynne heard from Colorado State today--they showed interest in her graduate school application. (She has already been accepted by Purdue.)

Tuesday, March 14, 1972 - Berkeley

I continued the task of answering the correspondence that accumulated during my absence.

I called Ted Sherburne in Washington at 11:15 a.m. to report on what transpired at the AAAS Board meeting in connection with our continued involvement; I had convinced them to continue their role, though there was some ambiguity as to whether it was a nomination or an appointment procedure. Ted stated that it is clearly a nomination procedure. I told him that the AAAS will be nominating three young people--Deborah Wolfe, Linda Harris and John Dennis--and noted that this meant Wallace Brode would not be reappointed. Ted then told me that Wallace is in the hospital, having had serious surgery last Friday. We agreed that we shouldn't say anything about this to him now, but that it is up to Science Service (not AAAS) to tell him.

Bill Yeomans called me from Washington. He had heard that the Barbara Ward piece has gone to press, but no one is sure what is in it, since none of the people with whom he is in contact had received replies. I told him of my letter from Charles Robbins and suggested he talk with him.

I had lunch in the cafeteria with the Nuclear Physics Group. Swiatecki told me that he is now convinced that the observation of superheavy elements produced by secondary reactions in the SuperHILAC is impossible due to the low yield resulting from the short range of the initial products.

Justin Bloom called me from Washington at 1:45 p.m. He has been offered a position as president of a small subsidiary of Capital Pipe and Steel Company of Philadelphia to be located in Washington. The subsidiary would be concerned with quality assurance to utilities on nuclear equipment. Joseph Scharfsin, whom I met at the dedication of the Peach Bottom reactor, is one of the officials involved and may raise the question with me of whether I would like to serve on the Board of Directors of the Washington subsidiary. Justin and I discussed Emil Nelson's letter and draft of the paper for the New York Academy of Sciences.

At 2:30 p.m., I attended a meeting of the tenured faculty of the Department of Chemistry in 406 Latimer Hall. About thirty members were present. We discussed the question of the promotions of George L. Kenyon and W. Martin McClain from Assistant to Associate Professor. The consensus seemed to be that they do not meet the minimal requirements for a tenure position.

Adrian Kragen phoned me at 5:00 p.m. He indicated that he has talked in general but not specifically with Dave Maggard about the restructuring of the Athletic Department and turnover in staff. After some discussion, I suggested that it would probably be better for me to consider being Faculty Athletic Representative at a later time; I could serve as a strategy person now, but not take on the full job.

Eric, Suki and I took a hike to the water tank. Lynne and Bill dropped by for dinner. Dianne stayed home from school today with a cold.

Wednesday, March 15, 1972 - Berkeley

I worked on my remarks for the Regents on Friday.

Colonel Stockdale called me at 11:00 a.m. from West Point and invited me to speak at a program sponsored by the Department of Engineering at West Point on April 7, which I declined because of my schedule.

I had lunch in my office, after which I went down to the campus and taught my last session of the quarter. After my lecture, I helped my Teaching Assistant Larry Bernstein check out the students' lockers.

At 3:15 p.m., I was interviewed in my LBL office by Tom Beatty and Guy Gettle (editor) of The California Engineer, for an article in their April issue. Sheila had given them a copy of my biography and some preparatory information. We had tea together. They were interested in my career in Washington, my present schedule of duties in the University, my activities outside of the University, the changing attitudes of the public towards science, and the prospects for the future of the federal support of science. They wanted to know whether I had expected a hostile welcome upon my return to Berkeley. I said no and that I hadn't had any problem with the students but that I had had some with a few of the faculty (which delighted them).

Victor Zackay came to my office at 4:45 p.m. to give me some material from the College of Engineering, the Engineering Alumni Newsletter and other sources for use in preparing my material for the presentation to the Regents.

Eric, Suki and I took a hike to the water tank.

Joseph Lahey dropped by the house at 6:00 p.m. The steering committee for the acquisition of green areas in Lafayette, of which he is now serving as chairman, met last night and made final decisions as to the priority in which they would like to ask for financial support from Edgar Kaiser. They place the property at the Pleasant Hill Road interchange as #1 priority, despite my misgivings, and asked that I

present it this way--with complete freedom to alter the priorities if this seems indicated in my talks with Mr. Kaiser. I am to give him a copy of the letter from E. C. Marriner to Mary Paige of August 5, 1971, and of the accompanying map in order to aid in my discussion. I said I would try to see Mr. Kaiser soon, but I couldn't set an exact date now.

Thursday, March 16, 1972 - Berkeley - San Francisco - Los Angeles

I worked further on my remarks for the Regents meeting tomorrow and wrote Professor Erik Rudberg, Permanent Secretary, my pleasure at being elected as a foreign member of the Swedish Royal Academy of Sciences.

Bob Hollingsworth called me from Washington at 10:00 a.m., following up Bill Doub's message that I wanted to have a briefing. He said that Jim Schlesinger is for it, so called to say that he would be glad to arrange it upon my next trip to Washington. I indicated that I would be going back in April and will let him know the exact date.

I had lunch in my office where Stan Thompson joined me for a cup of coffee. I then drove to the California Academy of Sciences in Golden Gate Park, where I served as a judge for the Nineteenth Annual San Francisco Bay Area Science Fair. Here I talked to Ted Beck (of El Cerrito High School), Executive Director of the Fair; Dorr Etzler, who was also serving as a judge; Si Stein, who had invited me to talk to the Santa Clara Science Fair on March 25 (which I had to regret); and many others.

At the conclusion of my judging assignments, I drove to San Francisco airport where I boarded United Airlines Flight No. 527, which left at 6:10 p.m. and arrived in Los Angeles at 7:10 p.m. I had a bite to eat at an airport coffee shop and took the airport bus to the Biltmore Hotel, where I checked into Room 7237.

Friday, March 17, 1972 - Los Angeles - Berkeley

I had breakfast in the Biltmore Coffee Shop. I then rode to the University Extension Center (11th Street and Grand Avenue) with Beth Hansen of the University Regents staff. While waiting for the Regents meeting to begin, I told Chancellor Bowker that my present schedule didn't allow me to accept his offer to me to serve as the Berkeley Campus Faculty Athletic Representative but that I would be happy to do so a year from now should this turn out to be feasible; also, I said I would be glad to help now on a strategic policy level if this could be worked out. He said he will discuss this with Bob Kerley and others to see if some arrangement might be possible.

I talked to Alex Sherriffs--first time I had seen him since 1964. I also talked to Davis Chancellor Jim Meyer to reassure him of my pleasure at the manner in which the arrangements for my commencement address were finally worked out. Others I talked to included Catherine Hearst, Bill Forbes, Ellie Heller, Bill Roth, and Bill Coblentz.

We went into the meeting room, where Chairman William French Smith called the meeting to order and called on Vice President Angus Taylor to introduce the program on basic research. After some opening remarks, Taylor introduced me and I gave my prepared remarks on the role of basic research in the physical sciences and engineering in the University of California. This was followed by presentation by Jim Hart (on the humanities), John French of UCLA (who emphasized research on the brain), Paul Zinner (who spoke on the synergistic value of teaching and research in the University), and Bill McElroy (who spoke on national research and predicted the demand for Ph.D.'s would rise again and there might be a shortage within 5 years). Our presentations were followed by laudatory remarks by a number of Regents.

The Regents present were Smith, Wilson Riles, Edward Heller, Dean Watkins, DeWitt Higgs, William Roth, John Lawrence, Catherine Hearst, Glenn Campbell, Bill Forbes, Robert Reynolds, B. Smith (alumni rep), Joseph Moore, Allan Grant, Edward Carter, William Coblenz, and John Canaday. Also in the room were Chancellors Bowker, Dean McHenry, Daniel Aldrich, James Meyer, and others, as well as Tom Cunningham, Vice President John Perkins, Alex Sherriffs, Dave Gardner, and many others.

After the presentation, the Regents went into executive session. I caught a taxi to the Los Angeles airport where I boarded United Airlines Flight No. 512 which left at 12:20 p.m. and arrived in San Francisco at 1:20 p.m.

I drove to my LBL office. Here I met with John Unik and Phil Horwitz, visiting from Argonne National Laboratory, along with Al Ghiorso, Stan Thompson, Ken Hulet, Earl Hyde, and Luciano Moretto, to discuss chemical methods (extraction chromatography) for identifying superheavy elements. Although Argonne cannot afford to send chemists to work for long periods of time in Berkeley, we agreed that we should have complete cooperation and collaboration in our chemical identification programs.

After our conference, Ghiorso and I took Unik and Horwitz up to the HILAC Building to show them the progress on the SuperHILAC and the detection equipment, such as SASSY, and the automatic chemistry setup.

At my request, Sheila wrote the passport office in Washington enclosing for cancellation my (#X003961) and Helen's (#X019853) diplomatic passports, with the request that they be returned so we may keep them for souvenirs. I also wrote Nina Tabachnik, the first place winner of the recent Westinghouse Science Talent Search, thanking her for the note of appreciation she sent me.

I took a hike to the water tank with Suki. Steve returned from Davis, riding home with friends, for the break between quarters. Helen drove to Davis to bring Dave home. He told us he has been admitted to graduate school at Berkeley, Colorado State, and Oregon.

Saturday, March 18, 1972 - Lafayette - Oakland

In the afternoon, Helen, Dave, Steve, Eric, and I, with Suki and

E. Coli, drove by the Orinda home of Leo Brewer where we were joined by Leo and his son Roger. We all drove to Skyline Boulevard in Oakland and then up Manzanita Drive to a point where we could hike on the Huckleberry Trail. After this hike, where we saw the unfortunate bulldozing that has taken place recently, we drove to our property in Orinda, where we hiked to the far side to see a large number of bay trees and a madrone tree. We talked to Steve Young of Tres Mesas Stable. He would still like to make an arrangement to use our land; I said this was not possible. The land is recovering quite well now that the horses have been kept off.

After we returned home, Eric and I planted a huckleberry bush in our back yard--we had brought it back from the Huckleberry Trail where it had been uprooted by a bulldozer. Dave and Steve had dinner with us. (Lynne and Bill are on a camping and fishing trip up in the area of Mendocino National Forest.)

At 7:00 p.m., J. L. Anderson, University of Tennessee at Chattanooga, called to say his work proves that radioactive decay is non-random; he would like to publish this finding, but Science will not accept his paper. I suggested he call Phil Abelson and try to convince him to do so in a direct conversation.

Sunday, March 19, 1972 - Lafayette

I worked in the yard a good part of the day, as well as working on my articles for Gmelin. In the afternoon, Helen and I took a hike around Lafayette Reservoir, with Dianne along riding twice around on her bike.

Eric spent most of the day sailing on the Reservoir with his friend Scott Alexander. Steve went to Mount Tamalpais for a hike with his friends Ron Mandella and Joan Duffield and others--they had five dogs with them, including E. Coli. Steve brought Ron and Joan home for a late dinner prepared by Helen.

Monday, March 20, 1972 - Berkeley

Dave drove me to my office in our Bonnevillle, then drove down to the campus for appointments with Professors Fred Wilt and Daniel Mazia in the Zoology Department in regard to his graduate work, after which he drove to Pasadena to talk to Professor James Bonner at Cal Tech tomorrow. His schedule then calls for visiting friends in La Crescenta, Palm Springs, etc., and to return to Lafayette at the end of the week.

Sheila is at Asilomar today and tomorrow, attending a Statewide University of California Conference of Academic Business Officers.

At 9:00 a.m., Phil Abelson called to say he would like to carry on with the Seaborg tradition of a buffet dinner and reception on the Sunday night before the annual Washington meeting of the National Academy of Sciences. It would be held at the Cosmos Club. I said I thought this would be an excellent idea.

I had lunch in the cafeteria. Right after lunch I went up to the

Health Services Building (No. 26), where I was given my re-employment physical examination by Dr. William Donald, Jr. and the Laboratory health staff. This was a rather thorough exam lasting an hour and a quarter; I believe I came off fairly well.

I met with Stan Thompson, Al Ghiorso and Earl Hyde to discuss our plans for radiochemists to identify the superheavy elements produced by the SuperHILAC; Stan has decided not to participate directly and so I shall try to locate some other people.

Helen and Dianne picked me up in the station wagon and drove me home. Eric, Dianne, Suki, E. Coli, and I took a hike to the water tank. I worked on the preparation of Dianne's vegetable garden plot in our back yard.

Tuesday, March 21, 1972 - Berkeley

I went to the Walnut Creek office of the State Department of Motor Vehicles to take the examination for the renewal of my driver's license. I passed despite some deficiency of vision in my right eye.

I had lunch in the cafeteria with Dan Miller (Professor of Physics from Indiana University, on sabbatical at the 88" cyclotron), Dick Diamond and Frank Stephens. Miller told me their 200 Mev proton (450 Mev calcium ion) cyclotron will be ready the summer of 1973. Diamond said Jol Liljenzin will arrive about May 30 and is willing to work at least part of the time on superheavy elements.

I attended the Associate Directors meeting in McMillan's office from 1:00-2:15 p.m. We discussed next week's meeting with the Townes' visiting committee, the definition of Principal Investigators on non-AEC projects, the impending possible strike of maintenance and construction workers in the University, and problems with getting AEC and University approval for severance pay. Among those present were Harold Fidler, Jim Born, Dick Connell, Elmer Kelly, Robert Thornton, Bill Wenzel, and George Pappas. After the meeting, I talked to Wenzel about possible support for the SuperHILAC from the Laboratory's Division of Physics but he was not hopeful.

Garff Wilson called me from the Public Ceremonies Office at 2:40 p.m. He said Chancellor Bowker would like me to act as escort for Mina Rees to his inauguration on April 6. I agreed to do so and indicated I would get in touch with Mina to make the necessary arrangements.

Helen picked me up and drove me home. Steve, Suki, E. Coli, and I took a hike to the water tank. The dogs were smelling very foul and had to be washed later in the evening.

Wednesday, March 22, 1972 - Berkeley

Helen drove me to work because Dave is still away on his trip to southern California.

Larry Bernstein dropped in at 8:30 a.m. to go over the grading of our Chemistry 1B section. I tried to call Mina Rees in my position as



her inaugural escort, but she is out of her office till Monday so I wrote her a letter requesting that she call me when she returns to inform me of her schedule and wishes regarding the occasion.

I met with Jack Hollander, along with Earl Hyde, to hear a report on his trip East to try to line up financial support for our Environmental Research program. He reported on his talks to people at EPA, NSF, AEC, and people concerned with the proposed National Environmental Laboratory (NEL). Our proposals to NSF have a good chance, the prospects at EPA are not good, and the prospects at AEC through a new budget for fiscal 1974 in the Division of Biology and Medicine appear good.

Charles Birdsall called me just before lunch to discuss the particulars of my talk to the Electrical Engineering colloquium on April 4. I asked him about the status of the Energy Program. He replied that George Maslach is anxious to move ahead and that Sandy Elberg thinks it should be set up. A group under Bill Wenzel will prepare the first proposal; there is some sort of funding conflict with Livermore in this area.

I called Lew Keller at Oak Ridge at noon and told him the information I would need in connection with my supporting his application for NAS funds. We discussed the arrangements whereby Bob Silva could come to Berkeley to coordinate the chemistry work at the SuperHILAC. He told me that ORNL has invited Jaromir Maly to visit. Maly is using the electron accelerator at Orsay. His premise is that if a superheavy nucleus were in the core, it would be so long-lived that it wouldn't be picked up but that it can be activated by knocking out a few neutrons. Oak Ridge is also preparing for visits by Ivo Zvara (Dubna) and Jens Kratz (Mainz). Lew said they are trying to get David Campbell to ORNL, though he hasn't discussed this with him yet.

I had lunch in the cafeteria with Hollander, Hyde, Templeton, and McMillan. We further discussed Hollander's visit to Washington.

Ellison Taylor called me from Oak Ridge after lunch to say that Bob Silva can work with us during the coming months and that they would cover all of the travel expenses until July 1, 1972. After that, ORNL would continue to support him except for travel expenses (which we may have to arrange for LBL to provide).

Lynne, Steve, Suki, E. Coli, Bessie, and I took a hike to the water tank. Lynne and Bill, who returned from their auto trip north (where they stayed in the Cason cottage), had dinner with us.

Thursday, March 23, 1972 - Berkeley

Helen drove me to work. She shopped for furniture with Lynne today.

I wrote Jerzy Neyman the comments he requested and explained why I believe the transuranium elements represent a "quasi-Copernican revolution" (copy attached).

March 23, 1972

Professor Jerzy Neyman  
Department of Statistics  
498 Evans Hall  
Campus

Dear Professor Neyman:

I have read your letters of March 2 and March 10, 1972, and Professor Kasha's letter to you of March 8, 1972, and am herewith sending my comments as you requested.

I believe that the transuranium elements represent a "quasi-Copernican revolution" and that the article covering them would not overlap in an undesirable manner with Professor Kasha's article on the Mendeleev periodic table, but would complement it nicely. I do not see any problem of conflict with Professor Weisskopf's article because the transuranium article would be devoted mainly to the chemical properties of these elements and would touch on the nuclear properties only because these determine the lifetimes of these elements; thus, there would be some reference to their decay by spontaneous fission and to the "closed shells" which may lead to the superheavy elements. But these references would be very brief and only for the purpose of supporting the main discussion.

Why do I believe that the transuranium elements represent a quasi-Copernican revolution? Before World War II, thorium, protactinium and uranium were always placed in the periodic table as homologues of hafnium, tantalum and wolfram, and the at-that-time undiscovered transuranium elements were always placed in the periodic table as analogues of rhenium, osmium, iridium, platinum, and so forth.

From 1934 to 1938, they were chemically studied on the basis of this hypothesis, which led to the discovery of nuclear fission. Then for a while, after the discovery of neptunium and plutonium, they were thought of as "uranides"--an erroneous hypothesis that delayed the process of the discovery of the transplutonium elements. Then, following a breakthrough in thinking which characterized them as "actinides," it was possible to discover

Jerzy Neyman

- 2 -

March 23, 1972

the next few transuranium elements and for the first time to predict the property of undiscovered transuranium elements over a broad range of atomic numbers. The recent discovery of element 104 and the study of its chemical properties has been an exciting final confirmation of the actinide concept, since this has now been shown to be the first "transactinide" element.

And now, the possible discovery of superheavy elements in the range of atomic numbers 110 to 125 and the extrapolation of the periodic table, as verified by high-speed computer calculations of electronic structure, has led to the characterization of elements as high as atomic number 170.

Cordially yours,

Glenn T. Seaborg

GTS/sms

cc: Michael Kasha  
Victor Weisskopf

March 23, 1972 (con't)

Charles Hitch returned my call at 10:00 a.m. I told him that as a result of my experience in trying to collect material for the speech to the Regents, I thought the University should prepare some kind of summary volume on what is going on and what has been done. There is an extremely good story there from the standpoint of the University's research contributions to society as a whole. Upon his inquiry, I thought the work in physical and biological sciences lent itself more suitably to this kind of thing, but it possibly could be expanded to include work in the social sciences and humanities. He said he thought it was a very good idea, though it would require a first-rate science writer who knows how to assemble such data and make it useful for the layman.

Rolf Mehlhorn dropped in at 10:30 a.m. He said that he has himself covered with a possible position in the Botany Department starting this summer but that he would like to affiliate on a spare-time basis with my work here; I said that would be fine. We will keep in mind the possibility of a position opening for him sometime in the future. In the meantime, he will work with John Conway, using very small amounts of computer time, and drop in to see me regularly to report progress and keep in touch. He is now working on the controversy concerning the electronic structure of element 103, to try to settle whether the ground state has a 6d or a 7p electron.

I had lunch in the cafeteria with Arthur Poskanzer. We discussed the possibility of identifying superheavy elements by collecting the volatile ones by heating a metallic target that had been bombarded with heavy ions, separating them with a mass spectrometer (by Maynard Michel) and looking for tracks (by Buford Price).

After lunch, I met with Mr. Jarring, legislative aide to the Subcommittee on Air and Water Pollution of the Senate Committee on Public Works, as well as Hollander and Sessler. We discussed the progress of the bill to create National Environmental Laboratories and the possible role of the Lawrence Berkeley Lab in this picture. Jarring will extend our invitation to Senator John Tunney to visit LBL.

Hollander and Sessler dropped in to give me a report on their meeting with McMillan to discuss how to set up an organization for Environmental Research in the Laboratory; I suggested the creation of a new division with members that would share their time with other divisions.

At 4:00 p.m., I visited the telephone operators in Building 80 to get acquainted. I met Jenny Castillo, the head operator, Carroll Weiss, and Ruby Waddell (who's retiring).

At 4:30 p.m., I visited Building 75 with Rosemary Barrett where I saw numerous old radioactive samples mounted on cardboard dating back to pre-war work. I suggested that these be retained until we can identify them further. I also visited my old haunts in Buildings 4 and 5.

Helen came by and drove me home. Steve, Suki, E. Coli, and I took a hike to the water tank. On TV I watched UCLA defeat the University of Louisville, 96-77, in the NCAA basketball semi-finals in Los Angeles.

I sent the updated manuscript of my article "Transuranium Elements" for the Reinhold Encyclopedia of Physics to Robert Besancon.

Friday, March 24, 1972 - Berkeley - Oakland

Professor Henry F. (Fritz) Schaefer came into my office at 8:30 a.m. We talked about his making calculations on the oxidation states and molecular compounds of the actinide, transactinide, and superheavy elements. He believes that the Hartree-Fock calculations are based on a number of approximations that can make them invalid in a number of instances. I gave him a number of references that will help bring him up-to-date in this area. We agreed that he and his students might work in collaboration with me in this field, with the proviso that he understands that the amount of computer time would be limited. I wrote Lew Keller at Oak Ridge to inform him of Schaefer's beliefs and requested that he send Schaefer any reprints that would help his work.

Mike Abramson of Whitaker and Baxter Company in San Francisco called at 9:15 a.m. They are heading the advertising campaign to oppose Proposition 9 and would like a statement from me which could be made in a news conference. I declined, citing my University involvement as paramount at this time.

Al Ghiorso told me that Michel's mass spectrometer is not sensitive enough to use for the separation of superheavy elements.

I talked to Bob Latimer about locating glassware and equipment used in early element discovery experiments at Berkeley.

At 10:00 a.m., I attended the regular meeting of the Superheavy Elements Group in the Conference Room of the HILAC Building. Bill Myers reported that he has set up a monthly telephone conference (on FTS) at 1:30 p.m. PST on the first Tuesday of each month among people working on the superheavy elements around the country. Besides Berkeley people, Ray Nix, Philip Seeger, and Franz Plasel participated in the first conference.

Chin-Fu Tsang reported on the Orsay experimental work (recently published) which suggests that Coulomb barriers for heavy ion are higher than expected; he said that the Swiatecki formula which adds a constant to the sum of the nuclear radii of projectile and target already accounts for the Orsay results while using a normal value for  $Z_0$ . Tsang also added factors to account for the fact that some of the nuclei are deformed.

Jack Gavin described the work on the ion source for the heavy ions. He has obtained 400 microamperes of mixed  $\text{Ge}^{+3}$  ions at the point of entry into the pre-stripper tank, and 250 microamperes of mixed  $\text{Ge}^{+4}$  ions. This corresponds to 20 microamperes, or  $10^{14}$  particles per second, of  $^{76}\text{Ge}^{+4}$  ions. There will be a loss of a hundred in going through the SuperHILAC.

Almon Larsh described the CAMAC computer system. Ghiorso reported on the status of the SuperHILAC--all the programs are going well. He also reported on the progress of SASSY, with Nurmia describing the very thin (few hundred Angstroms thick) foils of "formvar" used for the windows of the proportional counters.

I drove to the Kaiser Center in Oakland to meet Edgar F. Kaiser, Sr. for lunch at 12:30 p.m. I went to his office on the 27th floor, and we proceeded to the restaurant at the top of the Center where we had a table alone. During the meal, Frank Matthias, who played a leading role in the construction and early operation of the Hanford engineering works, came over to say hello. He has been at Kaiser for the last 5-10 years and plans to retire next year.

As a result of my queries, Edgar described to me the origin of the Kaiser Industries through his father Henry and of the many enterprises, including the Kaiser hospitals. He brought up the matter of Proposition 9 and indicated that private polls are showing that 60% of the people polled are in favor of it. He indicated that this would place severe restrictions on many industrial operations of California. I explained that I have elected to stay out of this controversy.

I then described to him the plans and activities of the Lafayette citizens group directed toward the acquisition of seven parcels of land along Mount Diablo Boulevard. When I described the plot at Pleasant Hill Road, he commented that \$200,000 seemed like a high price for a piece of land only an acre in size. He said he has no interest in having a parcel of land (as a park, for example) named after him. He also asked if we had explored all avenues of state and federal park support and said he would look into it himself.

Helen and I attended the annual Distinguished Service Award Banquet of the Berkeley Jaycees in the Angel Island Room of the Marriott Inn on the Berkeley Marina. We sat at the head table with Mr. and Mrs. Ken Porter (he is President of the Berkeley Jaycees), Mr. and Mrs. Rudy Daniel (he served as master of ceremonies), and Berkeley Vice Mayor Wilmont Sweeney. There was a small crowd of about 40 people. After a welcome by Porter and presentation of the Distinguished Service Award by Sweeney to Dr. Will G. Kelly, I was introduced as speaker of the evening by Daniel. I spoke on "Atoms on the Hill," illustrated by slides. Helen and I met a number of the people present, including Gen Calvin's niece whom we met in Washington last year.

Dave returned from his trip to southern California at about 8:00 p.m. He had a successful day of interviews on Tuesday at Cal Tech; they paid all his expenses, including travel.

Saturday, March 25, 1972 - Lafayette - Northern California

Eric left at 4:30 a.m. with his friend Scott Alexander and two others for Mendocino National Forest, where they are going on a backpacking trip.

Lynne and Bill came by for breakfast, after which they, Helen, Dianne, Suki, Bessie, and I started off on a visit to the gold

country. Steve and E. Coli rode with us as far as Davis; he will be starting his spring quarter there next week. We met his friend Katrina Price.

We then drove on to Sacramento to visit Sutter's Fort. We made a complete tour of the fort, then visited the nearby State Indian Museum. We had lunch at a Jimboy restaurant at 29th Street near M. We then drove on Highway 16 to Highway 49 and stopped at Sutter Creek. Here we saw an old Methodist Church (built in 1862), an old school, and many old stores and homes. We then drove a few miles to Martell (on the outskirts of Jackson) where we checked into the Martell Inn (Rooms 1 and 9).

We drove to Daffodil Hill (about 13 miles out of Sutter Creek) where we saw the daffodils in full bloom in McLaughlin's private garden. We also saw peacocks, sheep, goats, chickens, and roosters on the grounds. We then drove through nearby Volcano, a lovely old 49er town that is undergoing an obvious renaissance. We had dinner in Jackson at the Pioneer Rex Restaurant and returned to the Martell Inn.

#### Sunday, March 26, 1972 - Northern California

We had breakfast at Mel's Diner on Highway 49 in Jackson; it was an outstanding meal.

We drove on along Highway 49. Our first stop was Mokelumne Hill where we saw numerous old buildings dating from the 1850's. The old Leger Hotel is still operating. We then drove through San Andreas, headquarters of Joaquin Murietta and Black Bart, to Altaville where "Calvera Skull," a pleistocene relic, was found, and an old store and brick grammar school from the 1850's still stand. We took a side trip to Copperopolis on Highway 4; this began as the site of copper mining on a large scale in the 1860's. We visited a cemetery here with graves dated as early as 1865.

We drove back to Altaville, where we had lunch at the A & W Drive-In, and Angels Camp, where we visited the historic sights, including the Fair Grounds where the celebrated Jumping Frog contest is held each May. Next we drove on through Curran Hill and up a side road to the top of Jackass Hill to see a cabin where Mark Twain and Bret Harte stayed. We then went to Columbia State Park, a largely reconstructed town, and toured it. Lynne, Bill, Suki, Bessie, and I took a hike in the hills of the park.

We then drove on to Sonora where we checked into the Mountain View Motel (Room 17) on Highway 108. Lynne, Bill and I took a walking tour of Sonora to see some of the many old buildings. We all had dinner at the Sullivan Creek Smorgasbord Restaurant near our motel.

#### Monday, March 27, 1972 - Northern California - Lafayette

We had breakfast at Little Jon's Pancake House on Highway 108 (Route 2). We then drove southwest on Highway 49 to Jamestown, where we viewed the old buildings, and on to Chinese Camp, where we saw old buildings and a restored little church. We drove on to the site of Jacksonville (now an artificial lake) where we turned around and

headed back to Copperopolis. We drove west on Highway 4, through Stockton, continuing west (where we saw the remnants of a head-on collision between a passenger car and a truck which held up traffic for a while). We had lunch at El Gallito (a drive-in stand) in Brentwood and then drove on home, via Highways 4 and 24, arriving at 2:45 p.m.

I worked with Dianne preparing her vegetable garden for planting. Suki and I took a hike to the water tank. Dave told us he has decided to accept the Berkeley offer for graduate work.

Tuesday, March 28, 1972 - Berkeley

I wrote Professor Viktor I. Spitsyn at the USSR Academy of Sciences' Institute of Physical Chemistry in Moscow to congratulate him on the 50th anniversary of his career which was celebrated on April 25, along with his 70th birthday. I also wrote to Professor Albert Noyes at the University of Texas in Austin to say I would be happy to talk to Dr. George H. Milly about GEOMET (copies of incoming letters attached).

I had lunch with Mike Nitschke in the cafeteria. He is worried about the shortage of manpower for the fast automatic chemistry apparatus. Harold Oxin, Lois Baker's brother and a mathematics teacher at Diablo Valley College, stopped at our table to say hello.

At 1:00 p.m., I attended a Directors' meeting in Ed McMillan's office. Present were McMillan, Wenzel, Fidler, Connell, Thornton, Born, and Elmer Kelly, plus Jack Hollander and Andrew Sessler. The meeting was taken up with reports by Hollander and Sessler on the status of plans for environmental research. Hollander gave a report on his recent trip to Washington. He and Sessler made the strong point that, in order to follow up on Commissioner Doub's suggestion, the Laboratory should come to AEC with proposals for environmental research. It will be necessary to have a more formal organization with more help. I backed them strongly, suggesting that some kind of an entity to carry on the administrative work in the preparation of proposals is needed and that each division loan people, full- or part-time, to this group. There was much confusion about this need, and the question of whether some positive moves would be made was still unresolved when I left the meeting at 2:30 p.m. while it was still in session.

Helen drove Dave back to Davis this afternoon. Suki and I took a hike to the water tank.

Wednesday, March 29, 1972 - Berkeley

I wrote Sven Gosta Nilsson at the University of Lund in Sweden in reply to his inquiries about which type of visa he should apply for. He should be arriving at the end of July.

I picked up a box of Berkeley Metallurgical Project (wartime) papers in Latimer Hall this morning--these were finally found and will be useful in my Met Lab Section C-1 History project.





THE UNIVERSITY OF TEXAS AT AUSTIN  
AUSTIN, TEXAS 78712

March 16, 1972

Department of Chemistry

SS 3/24/72

Professor Glen T. Seaborg  
Department of Chemistry  
University of California at Berkeley  
Berkeley, California

Dear Glen:

During the war there was assigned to me at Edgewood a young lieutenant in the United States Army Air Corps trained in meteorology, George H. Milly. He was a first class person and after the war continued as a civil servant in the Chemical Corps. Ultimately he was sent to the University of Michigan where he obtained a Ph. D. The University of Michigan felt that he was a first class person and tried to induce him to join the faculty there.

Dr. Milly has now left civil service and for a time was with an insurance company in Springfield, Massachusetts. Now he has formed his own company, Geomet, in Rockville, Maryland. About this company I know virtually nothing but Dr. Milly would like to discuss some matters with you. I can recommend Dr. Milly as a man of high intellectual capacity with whom it was always a pleasure to work.

I am sending enclosed a letter I have received from him and a brochure about his company. I am sure that you would find him an interesting person to talk with.

With best regards,

Very sincerely yours,

A handwritten signature in cursive script that reads "W. Albert Noyes, Jr.".

W. Albert Noyes, Jr.

GEOMET, INCORPORATED • 50 MONROE STREET • ROCKVILLE, MARYLAND 20850  
301/762-5820 • CABLE ADDRESS: GEOMETINC

March 9, 1972

Dr. Albert Noyes, Jr.  
5109 Lucas Lane  
Austin, Texas

Dear Dr. Noyes:

It was good talking to you, if only briefly, after so many years. In view of your rare visits to the Washington area these days, I hope you will let me call on you when I am able to arrange it on one of our trips west.

I would be most grateful if you could arrange introductions and recommendations so that I might approach Dr. Glen T. Seaborg. The purpose of this contact would be to pursue the possibility of his participation, in some fashion, in GEOMET's activities in uranium exploration. The enclosed company brochure will provide an indication of the overall scope of our activities, including the subsidiary company, GEOMET Mining and Exploration Company. This company was formed specifically to pursue the application of new geophysical and geochemical exploration techniques, related to uranium mercury, copper and precious metals, hydrocarbons and subsurface water in arid regions. The first patent in a series of four has been issued and we have now accomplished a three year field development program which has led to our first operational discovery in Wyoming this past year. The discovery has verified the validity of our theoretical and practical considerations and promises to offer a major advancement in the techniques of uranium discovery at a time when the discovery rate per dollar expended is dropping rapidly, such that the assurance of meeting projected national requirements is not high.

In conjunction with this development we have also been actively pursuing major financing from European investment sources and it appears that this will be consummated in the next three to four months, enabling us to undertake exploration activities here and abroad relating to various mineral targets but with primary emphasis at this time on uranium.



Dr. Albert Noyes, Jr.  
March 9, 1972  
Page Two

I am desirous of insuring that we have not only the financial backing but also first rate management and technical talent in conjunction with this program. I can think of no individual better suited to assist in the development of our uranium programs than Dr. Seaborg. We would propose to solicit his participation on a mutually acceptable basis, to be developed. This could include membership on a technical advisory board or other consultant capacity, membership on the Board of Directors, and, depending on his interests and circumstances, an even heavier commitment of time.

I will appreciate any help you can give us in arranging these introductions and will look forward to seeing you some time in the future.

Sincerely,



George H. Milly, Ph.D.  
President

GHM/vmr

Enclosure



I signed hundreds of certificates for award winners in my role as President of Science Service.

I had lunch in the cafeteria with Hollander, Sessler, and Ghiorso (part of the time) to discuss the future of Norman Milleron's program and the organization of the environmental program (as an aftermath of yesterday's Associate Directors' meeting). We decided that Milleron should work somewhere in the environmental program. We came out with the idea that Sessler should suggest to McMillan the creation of an "Energy and Environment Program," with Hollander as the Director, to be staffed by a number of people transferred on a part-time basis from various Laboratory Divisions.

At 3:00 p.m., Mario Menesini (who worked with me on the CHEM Study program and is now a high school chemistry teacher in Pittsburg, California) dropped in to describe to me his project to write a high school chemistry book (Action Chemistry) for non-pre-university students; I endorsed the idea.

Suki and I took a hike to the water tank.

Thursday, March 30, 1972 - Berkeley

Wilton Dillon, Director of Seminars at the Smithsonian Institution, called me from Washington at 9:30 a.m. on behalf of Dillon Ripley. They would like me to serve on as advisory committee for planning the program of the AAAS December meetings, which I said I would do although I could not attend their April 11th meeting.

I had lunch in the cafeteria with Professor Alan D. K. Laird (Mechanical Engineering Department and Director, Sea Water Conversion Laboratory), along with Hollander and Sessler. We discussed prospects for geothermal power to generate electricity and to desalt water, especially in California. He is very optimistic and thinks that virtually unlimited amounts of electrical power can be generated. The technical problems have been solved. The remaining problems are in convincing people to go ahead, in acquiring land and mineral rights, and some concern with the possibility of inducing earthquakes in the seismic areas that give rise to the needed underground "hot spots."

At 2:30 p.m., I talked with Professor Stanley G. Prussin of the Department of Nuclear Engineering (he had been a student of Wayne Meinke and written his B.A. thesis at MIT with Charles Coryell). I described our plans for the SuperHILAC and asked if he might participate; this would depend on the outcome of a pending research proposal, but he will come up to talk to us after the spring quarter is under way.

I sent Gunter Koch (Karlsruhe) the revised manuscripts of my articles "History of the Transuranium Elements" and "Occurrence in Nature" for publication in Gmelin's Handbook of Inorganic Chemistry. I also wrote Dr. Gunter Herrmann (Mainz) to say that we would be pleased to have Jens Kratz come to work with us (copy of correspondence attached).

Friday, March 31, 1972 - Berkeley

I met from 9:20-10:30 a.m. with President Hitch's Scientific and Educational Advisory Committee for LBL. Present were: committee members Charles Townes (Chairman), Norman Hackerman, Roger Hildebrand, James Arnold, William Fowler, Harold Ticho, Edward Ginzton, and Kenneth V. Thimann, LBL Director Edwin McMillan, W. Wenzel, J. Born, E. Kelly, M. Calvin, G. Pappas, R. Thornton, R. Connell, and H. Fidler.

Townes asked McMillan to open the presentation, which he did by giving a brief history of the Laboratory. Thornton then gave a number of statistics concerning the past and present composition of the Lab's personnel in terms of professors, senior scientists, and so forth. Connell then described the general relations of the Lab with the AEC, Pappas described the business and financial aspects, and Kelly described the support activities.

I had lunch with Art Poskanzer and Dave Bowman in the cafeteria.

From 1:20-2:30 p.m. the Nuclear Chemistry Division made its presentation to the Scientific and Educational Advisory Committee for LBL. All members of the committee were present from the outset, with the exception of Arnold who joined us in the middle. McMillan and Fidler attended. Ghorso, Harvey, Shirley, Diamond, and I represented th Division. I made some opening remarks describing our program in general, after which each of the others made presentations describing their individual programs. The questions were mainly of a nature of trying to clarify understanding of the presentations and concerning our budgetary problems.

At 6:30 p.m., I went to dinner with the members of the Advisory Committee at the Marriott Inn on the Berkeley marina. Townes, Arnold, Fowler, Hackerman, Hildebrand, Ticho, Ginzton, Thimann, Calvin, Kelly, Born, Wenzel, Thornton, Connell, Fidler, and McMillan (who served as host) were present. I sat next to Hackerman, which gave us a good opportunity to exchange views on the trials and tribulations of university presidents and chancellors.

Saturday, April 1, 1972 - Berkeley - Lafayette

From 9:30-9:50 a.m., I met alone with the members of the LBL Scientific and Educational Advisory Committee. This was one of nineteen individual interviews that the committee conducted in order to determine the views of the Associate Directors and other senior members of the Lab or associated with the Lab.

In response to their request that I give them some idea of the present status of the Laboratory and the direction in which it might go, I gave them some of my thoughts. I said that, in the Nuclear Chemistry Division, I have found that during my absence there was a move away from the chemistry of the transuranium elements and the field of radiochemistry in general and that I thought these areas of interest should be revived as funds permitted.

March 30, 1972

Dr. Gunter Herrmann  
Institut für Anorganische Chemie  
und Kernchemie  
Kernreaktor  
Johannes Gutenberg - Universität Mainz  
6500 Mainz, Germany

Dear Gunter:

It is apparent that your letter to me of March 22, 1972, crossed in the mails with my letter to you of the same date.

We would be very pleased to have Dr. Jens V. Kratz come to work with us, and it would be very good if he could come as soon as possible. This would enable him to make preparations so as to be ready when the SuperHILAC begins to operate.

It is difficult to make any meaningful suggestions as to preparatory work that he might carry on before he leaves Mainz. We are of course interested in the elements with atomic numbers 110 through about 120, but of course elements 118 to 120 would fall outside of most general schemes. We have been thinking in terms of the application of extraction chromatography to the separation of elements 110 to 117, and Dr. Kratz might give this some thought as well as other methods that might occur to him.

I spoke to Al Ghiorso and he said that he still hopes that Norbert Trautmann can come, even though it would be only for a short period to work on the chemical identification of hahnium (element 105).

We discussed extraction chromatography methods with Dr. E. P. Horwitz of the Argonne Laboratory during a recent visit that he paid us, and came up with a general separation scheme which is briefly summarized on the enclosed papers. This is admittedly rather vague, but perhaps it would give

Gunter Herrmann

- 2 -

March 30, 1972

Dr. Kratz some idea of this approach.

We very much look forward to the arrival of Dr. Kratz.

With best wishes,

Cordially,

Glenn T. Seaborg

GTS/sms  
enc.

cc: Earl K. Hyde

bcc: Doral Buchholz

Horowitz 2/17/72

89c

$(C_{12}H_{25})_3NHCl$

Group Separations from Super-HILAC Targets

TLA\*HCl  
0.1 M HCl - Cl<sub>2</sub>

TLA Tri laurylammonium  
(dodecyl) chloride

Group A *Stays in col.*

6 Period Re, Os, Ir, Pt, Au  
Hg, Tl(III), Bi, Po  
5 Period Tc, Pd, Ag, Cd, Sn

Group B *comes thru col*

6 Period Hf, Ta, W, Pa, U, Np, Pu  
5 Period Zr, Nb, Mo, In, Sb, Te  
4 Period Fe, Cu, Ga

Group C

Alkali Metals, Alkaline Earths, No(II)  
Pb, Rh, Transplutonium Elements, Th

TLA\*HCl or  
Anion Exchange  
10 M HCl - Cl<sub>2</sub>

Group B *Stays in col.*

6 Period Hf, Ta, W, Pa, U, Np, Pu  
5 Period Zr, Nb, Mo, Sb, Te

Group B'

In

Group C

Alkali Metals, Alkaline Earths  
Pb, Rh, Transplutonium Elements  
Th

*comes thru col.*  
~~Alkali Metals~~



TCMA = Tricaproylammonium  
(C<sub>10</sub>H<sub>21</sub>)<sub>3</sub>N<sup>+</sup> Cl<sup>-</sup>

Group A

Subgroups (TLA•HCl System)

1. Cd
2. Ag, Re, Bi
3. Tc, Ir, Pt, Hg
4. Os, Sn, Po
5. Au, Tl

Group B

Subgroups (Anion Exchange, HCl-HF)

1. Zr, Hf
2. W
3. Mo
4. Nb
5. Ta

or

Subgroups (HDEHP System)

1. W, Ta, Sb, Te <sup>OK</sup>
2. Zr, Hf, Nb, Mo

Group B

Subgroups (TCMA•NO<sub>3</sub>)

89d

1. U, W, Pa
2. Pu, Np
3. Hf, Ta, Zr, Nb, Mo, Sb, Te

Group C

Subgroups (HDEHP System)

1. Rb, Cs, Fr, Tl(I)
2. Ra, Ba, Sr, No(II)
3. Ca
4. Pb
5. Lanthanides
6. T.P.(III)

- |            |        |
|------------|--------|
| La         | Am, Cm |
| Ce, Pr, Nd | Bk     |
| Pm         | Cf, Es |
| Sm         | Fm     |
| Eu         | Md     |
| Gd         | Lr     |
| Tb         |        |
| Dy         | Ta     |
| Ho         |        |
| Er         |        |
| Tm         |        |
| Yb         |        |
| Lu         |        |

INSTITUT FÜR ANORGANISCHE CHEMIE  
UND KERNCHEMIE  
KERNREAKTOR  
JOHANNES GUTENBERG-UNIVERSITÄT MAINZ

6500 MAINZ, March 22, 1972  
FRIEDRICH v. PFEIFFER-WEG 14 H/Bo  
POSTFACH 39 80  
RUF: 171 - BEI DURCHWAHL 17879

Professor Glenn T. Seaborg  
Lawrence Radiation Laboratory,  
University of California,  
Berkeley, California 94720  
USA

*BSN 3/28/72*  
*Trautmann - Seaborg 1972*

Dear Professor Seaborg,

I wish to thank you for the kind hospitality you extended to Dr. Norbert Trautmann during his recent stay at Berkeley. It is a great honour for our group that one of us can participate in the exciting and outstanding research work at the HILAC and SuperHILAC.

In conversations with Norbert Trautmann, you and other senior scientists of the Nuclear Chemistry Division asked him whether he could stay at Berkeley for a period of about two years. Unfortunately, it would be very time consuming to come to an agreement about that with the administration of our University: When he came back from Berkeley a year ago, I was very happy of being able to offer him a permanent position which became open at this time, but in this position his duty is to supervise the reactor operation. On a long range view, Norbert Trautmann has certainly a good chance to get a position with more flexibility, and his reputation as one of the fastest chemists which now extends to leading laboratories should help me to promote him.

On the other hand, it would be extremely interesting for us to contribute to your program and to get further experience with heavy-ion induced reactions. Therefore, I would like to ask you whether you would accept another member of my group. Norbert Trautmann and I agree that Dr. Jens V. Kratz is the most experienced among the younger coworkers. He is 26 years old and received his Doctor's degree in November 1971. He made important contributions to our program on rapid separations, in particular on rapid volatilization techniques for hydride forming elements. These techniques were applied

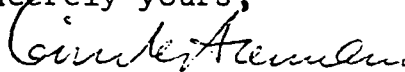
in detection, decay studies and fission yield measurements of short-lived isotopes of arsenic and selenium having half-lives down to a few tenths of a second. Of general interest for the nuclear structure field is his recent work on the decay of the delayed-neutron emitter 2.0-sec As-85 carried out in collaboration with H. Franz, also of my group. They found considerable structure in the delayed-neutron spectrum of this nuclide, in sharp contrast to the predicted continuous spectrum.

Jens V. Kratz would receive a fellowship from GSI for one or two years, and he could come very soon.

In addition, we could also perform, here at Mainz, supplementary work on fast separations for your program. As our experience shows, it may be quite laborious to work out a fast procedure even if one starts from a classical radiochemical procedure. Jens V. Kratz could then take care of the adaption of such a technique to heavy ion work and could assist in its application, and Norbert Trautmann could come for a shorter period of time if there is a shortage of man power during the actual runs. Of course, there are other conceivable ways of cooperation.

I am looking forward for your comments and suggestions.

Sincerely yours,



( G. Herrmann )

I indicated that I thought the Lab should go into research on environmental problems and be concerned with the improvement of the quality of life in general and be prepared to do this on an increasing scale--even if this should lead to a major area of emphasis in the future.

I also suggested that the research physicists in the Lab should be more prepared to change from research that is tied to the Bevatron (because this machine is no longer in the forefront and we may in fact lose it in the future) to other fields of research, such as, the utilization of the unique heavy ions that will be produced in the BEVALAC, and other areas of high energy physics, such as, assuming the role of users' groups in connection with the NAL, the SLAC, and the Los Alamos Meson Facility accelerators.

Following the meeting, James Arnold spoke to me to suggest that he knows of a former student of his--John Evans (who has been working with Raymond Davis at the BNL on the neutrino experiment)--who is seeking a position as a postdoctoral fellow and whom he can recommend very highly; I said we would certainly keep him in mind, but there would be no possibilities for this coming year. He also said that he has a position for a postdoc in chemistry to work with him in his program of the investigation of meteorites, moon samples, etc. at the San Diego campus; I said that I would get in touch with him if we had any suggestion in this connection.

I spent the rest of the morning in my office in Building 70A. Dianne joined us in midmorning (driven in by Helen) and helped Sheila unpack some of the things that were given to me during my stay in Washington (shipped in crates from the AEC).

Dianne and I stopped briefly at the Lawrence Hall of Science on the way home. Here we met Margie Hollander and her son Alan.

Eric, Suki and I took a hike in Briones Regional Park. We hiked on Briones Valley Road, then to the right out of the park to the cable TV apparatus on the hill overlooking Walnut Creek, then back along Crescent Ridge and through Homestead Valley.

Lynne and Bill, Bob Jansen and his sister Elizabeth joined us for dinner and spent the evening with us.

Esther Washington, Helen's Harrison Street friend in Washington, called at 10:00 p.m. to tell us her husband, William, had died of a heart attack this morning. This affected Helen strongly because she is quite close to the Washington family.

Sunday, April 2, 1972 - Lafayette

This being Easter Sunday, we had our traditional Easter egg hunt in the house (arranged by Helen). Lynne and Bill came to participate and stayed for lunch.

Eric, Suki and I took a hike in Briones. We hiked up the hill out of Homestead Valley to the Crescent Ridge trail which we then took back to our starting point.

Monday, April 3, 1972 - Berkeley

I wrote John R. Mayor at AAAS to give him my permission to use my picture on the front cover of the Directory and Proceedings of the Association Academies of Science for 1972 (it is customary to place the AAAS president's photograph here).

I held my office hours in Latimer Hall from 11:00 a.m. to noon, after which I had lunch in the O'Neill Room of the Faculty Club with the Chemistry Department faculty.

I taught my first laboratory session of Chemistry 1C at 1:10 p.m. in Room C Latimer Hall (schedule attached). Andy Friedman is my Teaching Assistant in this room. Dana W. Drath is to be my Teaching Assistant in Room E on Wednesdays.

I attended the Nuclear Chemistry Seminar at 4:00 p.m. Buford Price spoke on "Energetic Fragments from Reactions of Relativistic Heavy Ions with Heavy Nuclei."

Eric, Suki and I took a hike to the water tank.

Tuesday, April 4, 1972 - Berkeley

I met with Swiatecki and Glendenning in the late morning, and continuing through lunch in the cafeteria, to discuss offering a postdoctoral fellowship to Chin-Fu Tsang. We decided to offer him such a position extending over three years.

From 1:30-2:10 p.m., I participated in the monthly information exchange for superheavy element theory and related topics on the FTS conference call hookup. Others involved were Bill Myers, Wladyslaw Swiatecki, Chin-Fu Tsang, Stanley Thompson and Luciano Moretto of the Fission Group, and Al Ghiorso, from Berkeley; Philip A. Seeger and Mike Howard from Los Alamos; Franz Plasil and C. Y. Wong from Oak Ridge; U. Mosel from the University of Washington; and Heiner Meldner from the University of California at San Diego. We spent a good deal of time discussing the concept of toroidal and bubble nuclei, as described in a recent preprint of an article which C. Y. Wong has submitted for publication in Physical Review.

At 4:15 p.m., I gave a talk, "Energy for the Future," to a seminar in the Department of Electrical Engineering and Computer Sciences in Room 277 Cory Hall. (The room seats 141 and there was an overflow crowd.) The talk was illustrated by about 50 slides and covered the areas of conventional nuclear power, breeders, fusion, solar energy, and geothermal energy. It was followed by a half-hour question period. I was introduced by Professor Charles (Ned) Bird-sall. The questions were lively and included penetrating ones on the safety of nuclear power, the need for our present and projected levels of energy, the possibility of public ownership of all utilities, the regulatory role of the AEC, the need for conventional water reactors at all, and so forth.

Eric, Suki and I took a hike to the water tank.

## ANALYSIS - QUALITATIVE AND QUANTITATIVE

Experiment	Periods	Points	Secs. 1 + 2 (MW)	Secs. 3 + 4 (TuTh)
17*, 19, 20, (21); gen, Zn, Cu, (Ag)	3	-	Apr. 3, 5, 10	4, 6†, 11
28 (UNK) 2 solns.	3	50	12, 17, 19	13, 18, 20
22, 23; Fe, Hg	1	-	24	25
29 (UNK) 2 solids	4	60	Apr. 26, May 1, 3, 8	Apr. 27, May 2, 4, 9
(24) (25) 26; (Al) (Cr) Pb	1	-	May 10	May 11
30 (UNK) 2 solids	4	80	15, 17, 22, 24	16, 18, 23, 25
Vitamin C	2	20	May 31, June 5	May 30, June 1
Review Day	-	-	-	June 6
Review and Checkout Post Cards to T.A.	1	-	June 7	June 8
	<u>19</u>	<u>210</u>		

(21) (24) (25): will be discussed in lecture; do the problems in your notebook. Review Ag chemistry from Chem 1B Expt "14".

\* Omit  $K^+$  in Expt. 17. Expt. 27 (Sn) is eliminated; no "unknown" will contain tin. Expt. 18 (Ca) is eliminated; there is no need to report  $Ca^{++}$ ,  $K^+$ ,  $H^+$ , or  $OH^-$  (but your "unknowns" may contain these ions). "Unknowns" may be oxides.

† Charter Day Thurs, Apr. 6: Sec 4 has class from 1-2 p.m. only. From 2-4 p.m., Lab cancelled to permit attendance at Exercises.

Memorial Day Holiday: Mon., May 29

Inst. Ends: Sat., June 10

Final Exam: Mon., June 12, 6:35-10:00 p.m. (Group 3)

- All Lab Assignments (including calculations) are due at the start of the first lab period following completion of the experiment. Record primary data directly into your notebook; no scraps of paper. A bound notebook is required. Slide-rule is required. Records should be kept in ink.
- Labs are two two-hr sessions following two 45-min. discussion periods per week. Do not hesitate to ask questions. All lab work must be completed. ALL LAB WORK MUST BE DONE IN YOUR REGULARLY-SCHEDULED PERIOD. EXCEPTIONS FOR COMPELLING REASONS (SUCH AS ILLNESS) MUST BE APPROVED BY YOUR T.A.

TEXTS: Pimentel and Spratley, "Understanding Chemistry".  
Latimer and Powell, "A Lab Course in General Chemistry".  
Butler and Grosser, "Relevant Problems for Chemical Principles".

Wednesday, April 5, 1972 - Berkeley

I wrote August Schou of the Nobel Committee in Oslo to support the nomination of Elise Ottensen-Jensen for the Nobel Peace Prize.

I talked with Bob Silva, who arrived last night, about setting up our superheavy element chemistry work; he will be here a week or two to help. With the assistance of Hyde, we decided to put the chemical work in Room 203 and the counting work in Room 210, Building 70. Dieter Aumann, Jens Kratz and Jol Liljenzin will work in these rooms.

I had lunch with Silva and Hyde in the cafeteria; we continued our discussion of organization here.

I taught my first session of Chemistry 1C in Laboratory Room E with Dana Drath as my teaching assistant.

From 3:30-4:00 p.m. I met with Michael Blakstad of British Broadcasting Corporation to discuss my participation in the filming of a portion of "The Nobel Prize" on Monday in my office at LBL, my freshman lab section, lunch at the Faculty Club with the chemistry faculty, Room 307 Gilman Hall, and the HILAC Building.

I met with Chin-Fu Tsang to offer him the three-year appointment in a postdoc position; he will let us know if he wants to accept.

Suki and I took a hike to the water tank.

At 7:30 p.m., Helen and I attended a dinner given by President and Mrs. Charles Hitch at Blake House for Jacques Cousteau and for Chancellor and Mrs. Albert H. Bowker (he will be inaugurated tomorrow). Among those present were Vice President and Mrs. Chester McCorkle, Vice President and Mrs. Robert Johnson, Chancellor and Mrs. Ivan Hinderaker, Chancellor Dean McHenry, Chancellor and Mrs. Daniel Aldrich, Chancellor Vernon Cheadle, Chancellor and Mrs. Charles Young, Mr. and Mrs. Walter Haas, Jr., Mr. and Mrs. Peter Haas, Mr. and Mrs. Goldman (she is the former Rhoda Haas), Frederick H. Burkhardt (President of the American Council of Learned Societies, he served with me on the Commission for the Humanities), Mrs. Roy C. Bowker (the Chancellor's mother), Dr. and Mrs. Garegin Saroukhanian (the winner of this year's Haas award, from Iran), Mr. and Mrs. Irving Stone, and former Chancellor and Mrs. Edward Strong.

I sat between Mrs. Roy Bowker and Mrs. Peter Haas. Mrs. Bowker told me a great deal about her son's early life and present activities. At the conclusion of the dinner, President Hitch offered individual toasts to Cousteau and Bowker who each in turn responded. In the course of the evening, McCorkle, Johnson, Cheadle, McHenry, Hinderaker, and others expressed the opinion that the Faculty Consultation Hour on the subject of research, conducted with the Regents on March 17, was very well received by the Regents, the press, and others present, and was very successful. Stone reiterated his confidence in Doubleday and particularly in Sam Vaughn in connection with any kind of autobiographical book I might want to publish on my years in Washington.

Thursday, April 6, 1972 - Charter Day, Berkeley

Henry F. Schaefer dropped in to report progress on the calculation of electron structure of heavy elements.

Helen and I attended the Charter Day luncheon in the Pauley Ballroom of the Student Union, beginning with a reception at 11:30 a.m. I served as escort for Mina Rees throughout the day, and Helen drove Rosemary Shepard into the campus so that she might attend the afternoon ceremony in the Greek Theatre.

Several hundred people attended the luncheon. Seated at the head table were President and Mrs. Hitch, Chancellor and Mrs. Bowker, Jacques-Yves Cousteau, Dr. and Mrs. Garegin Saroukhanian, William French Smith, Dr. and Mrs. Edward Strong, Roger Heyns, Helen, and me. President Hitch served as master of ceremonies, made some welcoming remarks, called on Smith who expressed greetings from the Regents and Heyns who expressed general greetings to Chancellor and Mrs. Bowker and proposed a toast. Chancellor Bowker responded briefly.

We then went in busses to the Greek Theatre, where we robed for the Charter Anniversary ceremony honoring the inauguration of Albert H. Bowker as Chancellor at Berkeley. It was a beautiful sunny day. With more than 10,000 people, the Theatre overflowed on to the grassy area above the seats. President Hitch presided. At the beginning, he introduced the previous Chancellors who were onstage--Roger Heyns, Edward Strong and me. We each received good ovations, with a particularly strong one for Heyns, Bowker's immediate predecessor.

Hitch then called upon Regent Christian E. Markey, Jr., President of the Alumni Association, who brought greetings from the alumni; Professor Delmer M. Brown, Chairman of the Berkeley Division of the Academic Senate, for greetings from the faculties; Alan Fong, co-President of the Associated Students at Berkeley, on behalf of the students; and Dr. Frederick H. Burkhardt, President of the American Council of Learned Societies, who extended greetings on behalf of the academic community.

Hitch then introduced Albert H. Bowker. After a brief inaugural ceremony, Bowker delivered his address, in which he acknowledged the need for change in the campus administration to meet the growing needs, and vowed to carry them out.

Hitch presented the Elise and Walter A. Haas International Award to Dr. Garegin Saroukhanian. (Before the ceremony, I had the opportunity to discuss with Saroukhanian my visit to Teheran two years ago and my long conversation with Prime Minister Amir Abbas Hoveyda.)

Hitch then introduced Cousteau, who gave a moving talk, emphasizing the importance of preserving our environment; this was extremely well received with a standing ovation. Dr. Bowker presented the Berkeley Citation (which I had received during the dedication of the Lawrence Hall of Science in 1968) to Cousteau and Burkhardt.

The whole ceremony was remarkable in that there were no incidents, and so it was reminiscent of my own inauguration 13 years ago.



Thursday, April 6, 1972 (con't)

I drove home after the ceremony in one car, while Helen and Rosemary went in our other car. Mina Rees was driven to San Francisco by Elizabeth Scott.

During the day, Mina and I talked about a great deal of AAAS business. In particular, she told me that at the end of the last Board meeting, after I had left, it was decided to replace Athelstan Spilhaus as chairman of the planning committee for the international meeting in Mexico City in June 1973. They hastily suggested George Harrar as the new chairman, but on retrospect she and Bill Bevan decided that Harrar is not in a position to give it sufficient time and attention. They would like to see me assume this responsibility. I said I would rather that Spilhaus continued, but if this is impossible, I would be glad to take it on.

We all changed into our formal clothes for the evening, and Helen, Rosemary and I drove to the Sheraton-Palace Hotel in San Francisco for the 104th University of California Charter Day Alumni Association Banquet. We attended the reception for the head table guests in the French Parlour and then went into the Garden Court for the dinner.

Seated at the head table were: Mr. and Mrs. Richard Erickson (Executive Manager, California Alumni Association); Dr. and Mrs. Paul W. Yinger (Chaplain); Dr. Frederick Burkhardt; Regent Designate and Mrs. William B. Keene; Regent and Mrs. Joseph A. Moore, Jr.; Regent and Mrs. Glenn Campbell; Regent and Mrs. William M. Roth; Regent Catherine Hearst; Regent John E. Canaday; Regent Elinor Heller; Regent William French Smith; Dr. and Mrs. Edward W. Strong; Dr. and Mrs. Garegin Saroukhanian; Dr. Roger W. Heyns; Mrs. Roy C. Bowker; Mr. and Mrs. Irving Stone; Chancellor and Mrs. Bowker; President and Mrs. Hitch; Regent Christian E. Markey, Jr.; Helen and I. I sat between Mrs. Hearst and Mrs. Strong.

Christian Markey presided and began by introducing President Hitch who concluded his short greeting by leading a Cal yell. The ex-Chancellors were then called upon. Roger Heyns, who received a standing ovation, emphasized the support that Bowker will receive from the alumni. Strong spoke of the intellectual atmosphere at Berkeley and mentioned the students in the audience who might have had courses from him. I began by indicating the pleasure of Helen and me being back home, recalled the phone call from President Kennedy and the family vote about going to Washington, spoke of the four ex-Chancellors and present Chancellor as a quintet, mentioned a couple of the problems that I was faced with when I was Chancellor, emphasized the importance of athletics in Bowker's future, described my conversations with Bowker's mother last night as a source of information about him, and ended by saying that the three ex-Chancellors on the campus would not be "big brothers" looking over his shoulder, but we would be there to back him up in time of need and with the wish for future success for him and Rose.

Markey presented the Walter and Elise Haas International Award to Garegin Saroukhanian who responded with a description of the status of

work on health problems in Iran. Markey then presented the Alumnus of the Year Award to Irving Stone who made a charming animated response consisting of a description of his methods of unearthing information that formed the basis of his recent novels The Agony and the Ecstasy and Passions of the Mind.

Friday, April 7, 1972 - Berkeley

From 10:00 a.m. to noon, I attended the meeting of the SuperHILAC Research group (changed from Superheavy Elements group) in the Conference Room of the HILAC Building. Diamond gave a review of the work of Stephens and him on coulomb excitation by heavy ions, after which Stephens outlined some planned experiments in this field with heavy ions from the SuperHILAC. He also discussed the possibility of observing Quantum Electro Dynamics (QED) effects on the energy of x-rays that might be emitted from compound nuclei of atomic number 170 or greater produced by U plus U reactions. Peter Armbruster claims to have observed this effect in the M x-rays emitted from compound nuclei of atomic number about 145 formed from the bombardment of uranium with iodine. When the K electron binding energy is greater than one Mev ( $Z = 170$  or greater) the x-ray emission should be accompanied by positrons and these will be looked for. Ghiorso expects the first beam in the SuperHILAC in about two weeks. A report was made on an experiment on SASSY in which a wire was put through it in order to test its operation.

From 12:00-1:20 p.m., I presided over the regular bag-lunch meeting of the Program Committee of the Nuclear Chemistry Division. Present were Cerny, Edelstein, Ghiorso, Glendenning, Harvey, Poskanzer, Shirley, Street, Thompson, Diamond, Hollander, and Hyde (Perlman and Templeton were absent).

I opened the meeting by extending, on behalf of the committee, congratulations to Dave Shirley as a recipient of the Ernest O. Lawrence Award, which he will receive at Germantown next week. I reported on our meetings with the Townes committee (the Scientific and Educational Advisory Committee for LBL) on March 31 and April 1. I then reviewed our plans to date for staffing the radiochemistry work.

Earl Hyde announced that Dave Templeton would represent us in an LBL committee, headed by Leroy Kirth, to evaluate the computer center. Dave Shirley encouraged those of the committee who are members of the Academic Senate to apply for Committee on Research funds on the campus. Joe Cerny will coordinate the proposals that come from our group.

Earl opened a discussion of the feasibility of the Nuclear Chemistry Division having an outside review panel (in light of the GAO criticism that we don't audit ourselves). We arrived at a general consensus that it would be premature to form such a panel now. We will try over the next three months to evaluate what the Townes committee is doing; a subcommittee could conceivably come out of that group. In the meantime, it is not clear that Townes is aware of our problems with the GAO. I asked the committee for names of people to suggest in the event that President Hitch should ask me who should serve on such a subcommittee.

After the meeting, Ghiorso, Hollander and I discussed the problem of the refusal of NIH to support the Norman Milleron proposal for the development of apparatus to analyze breath. We agreed to try to retain Milleron for a while notwithstanding because of the strong wishes of James Ramey and Ralph Nader. Hollander will call Nader to explain the problems we are having with his brother-in-law (Milleron).

I called William Corliss at his home in Maryland at 3:00 p.m. and told him about the invoice I had received from E.P. Dutton for "author's alterations." He had not received one and agreed that it should be taken out of royalties. He thought we might want to contest the figure, however. We discussed Al Crewe's review of the book and concurred that he did not appear to have read it. I gave him a little background about the reviewer. We discussed the status of the various translations and reviews.

#### Saturday, April 8, 1972 - Lafayette

In the afternoon, Eric, Dianne and I played nine holes of golf at the Contra Costa Country Club. Eric shot 54, Dianne 110, and I 57.

Helen and I went to dinner at the home of Mr. and Mrs. Tough (Terry Tough is Dan Wilkes' secretary) in Oakland. Present were Dan and Evelyn Wilkes and their daughter Shelley, Ed and Elsie McMillan, the Robert Thorntons, the Harold Fidlers, William Douglass and his friend Dolores.

#### Sunday, April 9, 1972 - Lafayette

I worked on my Chemistry 1C lectures and watched Jack Nicklaus win the Master's Golf Tournament with a 286 and the Milwaukee Bucks beat the Los Angeles Lakers in the NBA semi-finals, 93-72.

Suki and I took a hike around the Lafayette reservoir, including a trail on the hills on the north side.

#### Monday, April 10, 1972 - Berkeley

Starting at 10:00 a.m., BBC producer Michael Blakstad and three assistants loaned from KQED (Rick Wise, Peter Hobe, and Tom Valens, son of Red Valens) did some filming of me for a sequence in the forthcoming BBC-TV program on the Nobel Prize. Similar filming of Linus Pauling and William Shockley took place last week.

First they filmed me and some of the effects in my LBL office, then took some shots of me as I walked down the hill to the campus to hold my 11:00 a.m. office hour. Then they met me in the Lewis-Latimer Room of the Men's Faculty Club where the weekly luncheon of the Chemistry Department faculty was being held and filmed us during this.

They then continued the filming while I was talking to my Chem 1C section in Room C of Latimer Hall. This was followed with a few shots on the outside fire escape of Latimer Hall and ended with some filming in Room 307 Gilman Hall, the room where plutonium was discovered. Here Blakstad interviewed me about the excitement of the early days in Berkeley (the 1930's), the status of Room 307 Gilman at that

time compared with now, the feelings of scientists concerning their contributions to weapons during World War II, and my thoughts concerning my role as a "powerful scientist" while I served in Washington.

Eric, Suki and I took a hike to the water tank.

Tuesday, April 11, 1972 - Berkeley - Oakland

I wrote Dillon Ripley at the Smithsonian that I would be delighted to serve on his advisory committee (copy of incoming letter attached).

At 9:40 a.m. I called Bob Penneman at Los Alamos to invite people from there to participate in our chemical identification of superheavy elements; he will discuss this possibility with George Cowan. We also discussed some of the arrangements in connection with my visit to Los Alamos May 31-June 3.

I called Dan Wilkes at 10:15 a.m. I described the program of the National Educational Film Festival (Monterey Educational Film Foundation) and asked if he would like to represent me at their awards night on May 6. He said that he presented the Ernest O. Lawrence Award last year and would be doing so again this year. If the planning committee has no objection to his presenting two awards, he said he would be glad to also present the "Glenn T. Seaborg Award for the best film reporting on Research and Development." I will await further word from the chairman, Richard Spees.

I drove to the Kaiser Center in Oakland for a noon luncheon appointment with Henry F. Kaiser, Sr. I went directly to his office on the 27th floor and met there with him and Nils Eklund, Vice President of Kaiser Industries. Edgar came right to the point and said that he was sorry to have to disappoint me, but he and Rose have decided that their personal finances simply would not allow them to make a contribution along the lines that I requested during my luncheon with him on March 24.

He then explained that he and Nils had considered alternative approaches and handed me a package that included sheets summarizing "City of Lafayette Beautification Program--Alternative Approaches," "Lafayette Park Project," "State and Federal Park, Recreation, and Historic Financial Assistance Programs to Local Jurisdictions" (Partial List, June 1969), "Legal Authority for Recreation and Park Districts in California," "Uniform District Election Law" of the Elections Code, State of California, and the 1971-72 California Park and Recreation Directory. They described the other possibilities they had looked into, and I reiterated these in a letter to Joseph Lahey that I wrote when I returned to the office (copy attached).

We then went up to the restaurant on the top floor for lunch, where we sat alone at a big round table. The conversation here was very general and included discussions of the problems that face the state of California should Proposition 9 pass.

After lunch we returned to Edgar's office and continued our discussion. I kept pressing to say that his negative decision would



SMITHSONIAN INSTITUTION

Washington, D.C. 20560  
U.S.A.

15-D 4/10/72

MAR 31 1972

Dr. Glenn T. Seaborg  
President  
American Association for the  
Advancement of Science  
1515 Massachusetts Avenue, N. W.  
Washington, D. C. 20005

Dear Glenn:

In your capacity as President of the American Association for the Advancement of Science, no one is more qualified than you to speak on the importance of the Association meeting to be held here in Washington this December. As General Chairman of the conference, I have been asked to form an advisory committee of distinguished citizens drawn from government as well as the management of academic and business institutions with a stake in science and technology, and who recognize the need for better public understanding and support of science. I would be honored if you would join this committee. Your ideas about persons or organizations who could help in the development of exhibits, demonstration lectures, and other projects of a non-technical nature would be most helpful.

I am certain you are already working with Walter Berl to develop the theme of the interdependence of world science. Your own recent visit to Africa might lend us some needed perspective on science cooperation with developing countries.

I would very much value your support and willingness to serve on the committee. Could you let me know by writing, or telephoning 467-4488?\* You will shortly receive an invitation to an Advisory Committee meeting and reception to be held here at the Smithsonian on April 11, from 3 to 5 p.m.

\* Philip Kitterbush office

Sincerely yours,

S. Dillon Ripley  
General Chairman

See William Bell [351-5587]  
3/30/72

April 11, 1972

CONFIDENTIAL

Mr. Joseph E. Lahey  
1265 Upper Happy Valley Road  
Lafayette, California 94549

Dear Joe:

At their request, I had lunch today at the Kaiser Center in Oakland with Edgar F. Kaiser, Sr., and Kaiser Industries Vice President Nils Eklund, to learn the reaction to the request that I put before Mr. Kaiser on March 24. I received a largely negative reaction so far as immediate financial aid from Mr. and Mrs. Kaiser is concerned, but an offer of as much help as might be needed with respect to some other interesting suggestions for solving our problem.

Mr. Kaiser began our conversation by stating immediately that after careful consideration of my request, he and Mrs. Kaiser have been forced to the conclusion that they do not feel that they can make a personal financial contribution at the present time. He also indicated that the same is undoubtedly true of the Kaiser Foundation, which he does not control but with whose financial condition he is well acquainted. In addition to extraordinary recent demands on the Kaisers' personal resources, the negative answer is not unrelated to the present adverse financial situation of Kaiser Industries--a position which it shares with many other industries.

A definite factor in leading Mr. Kaiser to this conclusion was the amount of the funds required. The total purchase price of the seven pieces of land is estimated at about \$500,000, and they suggested that another \$500,000 might be required for land improvements--leading to a total \$1 million.

Joseph E. Lahey

- 2 -

April 11, 1972

Mr. Kaiser then told me that he had asked Mr. Eklund to look into other possibilities, which they described to me. They noted that Lafayette has the lowest total property tax rate in the entire area (that is, compared with Concord, Pleasant Hill, Walnut Creek, Orinda, Oakland, and Berkeley). This might make it feasible to impose a special city tax, such as a property tax or a sales tax, to raise the required money.

Another possibility would be the creation of a special park district with a bond issue to raise the required money. They pointed out that a 20-year bond issue for \$500,000 at 6% would increase Lafayette's tax rate only \$.07 cents per hundred dollars assessed valuation, corresponding to an annual increase of only \$7.00 in the property tax for the owner of a house with a market value of \$40,000; a million dollar bond issue, of course, would lead to a doubling of these figures.

They also mentioned the possibility of a beautification project along Mount Diablo Boulevard, to be financed by businessmen along the boulevard in the manner of a similar beautification project of a few years ago involving Broadway in Oakland. Still another alternative would be a 50% matching Federal grant.

These four possibilities were summarized in a package of information that they gave me and of which I am enclosing a copy of the summary pages. (The additional information included in this package consists of summary information on relevant State of California agencies--including a document "Legal Authority for Recreation and Park Districts in California"--which I have available for the use of our citizens' group.)

I expressed appreciation for their suggestions. I indicated that our organizing committee and the various Lafayette citizens involved in this project had probably already considered these possibilities; we were nevertheless proceeding in the present manner (that is, attempting to raise money through donations by Lafayette citizens with the thought of possibly seeking matching Federal or other funds through the Lafayette City Council) as the preferred method. I emphasized that we realized it might not be possible to raise sufficient money to buy all seven pieces of land, in which case we expected to acquire one or more pieces as such acquisitions became financially feasible. We hoped to start with financial contributions from a few leading citizens of Lafayette and that such a beginning would

Joseph E. Lahey

- 3 -

April 11, 1972

Have a great symbolic meaning for the success of such a program.

Mr. Kaiser, however, continued to express doubt about the feasibility of this procedure. He emphasized that he was genuinely interested in the acquisition of the seven parcels and that his suggestions--particularly that of a bond issue--were by far the more feasible methods of proceeding. He indicated that he and Mr. Eklund would be willing to help along these lines in every way possible, and that he would be glad to explore these paths with City Manager E. C. Marriner. I expressed our thanks for this and indicated that we would be in touch with him, should we want to request his help and that he discuss the matter with Mr. Marriner. (Should we decide to proceed along these lines, I am sure that Mr. Eklund is prepared to devote some time in helping us.)

When I reiterated to Mr. Kaiser at the end of our conversation that we might still want to proceed with our original plans for raising the money, particularly should some of his other suggestions prove to be unfeasible, he indicated that under such circumstances, his negative response concerning personal financial help would not signify a complete and permanent "no." However, it is clear that we would have to investigate and exhaust these other channels before we could hope for any personal financial help from the Kaisers, and even then it would be doubtful. But I do want to emphasize that Mr. Kaiser and Mr. Eklund pledged their complete and enthusiastic support for the development of these alternative approaches to the problem.

In summary, I believe that the Lafayette citizens group has some rethinking and some ~~re-evaluation~~ ~~needed~~ unless others are more successful in making breakthroughs for substantial personal financial contributions.

With best regards,

Cordially,

Glenn T. Seaborg

GTS/sms

cc: J. Gordon Holmes, M.D.  
J. S. Holliday  
Mrs. Mary Paige



be a great disappointment to the Lafayette citizens' group. They feel they need someone like him to start the thing off with a contribution and that a number of citizens in Lafayette who have lived there a long time and enjoyed its advantages might very well make contributions to a project such as this as compensation for these advantages. I said that I hated to go back to the group with a completely negative answer, and pressed him as to whether I might not say that it wasn't a complete "no" and might be reconsidered after some of these other channels had been explored. Edgar agreed to this.

On the way out of the Kaiser Building, I met Sally Wiser at the reception desk, who greeted me, "Hello, Chancellor Seaborg!" It turns out that she worked in President Kerr's office during some of the time I was Chancellor.

At 3:30 p.m., Jack Hollander and Andy Sessler dropped into my office, joined soon after by Ken Street, to describe the results of the Associate Directors' meeting at which Hollander made the presentation calling for an Energy and Environment Program in the Lab (copy of notes attached). They told me that the reaction of McMillan was somewhat negative and that of Bill Wenzel was quite negative, while the others present didn't say very much. It appears that we still have some distance to go before we can convince the Laboratory administration that the very future of the Lab depends on moving in the direction of creating a substantial program in the field of energy and environmental research to fill the gap as the budget for high energy physics continues to go down.

Eric, Suki and I took a hike to the water tank. Lynne and Bill came by for dinner. I voted in today's Lafayette election for two City Council members (Wally Costa and Bob Fisher), who, I learned later, were elected.

Wednesday, April 12, 1972 - Berkeley

I visited the exhibit in Doe Library featuring pictures of the Charter Day exercises over the years in honor of Chancellor Bowker's inauguration.

I attended Professor Samuel Markowitz's Chemistry 1C lecture in the Physical Sciences Lecture Hall in order to get a better idea of the course content.

Chin-Fu Tsang dropped in to tell me he has decided to accept our offer of a three-year postdoctoral appointment. I had lunch in my office and then walked down to Latimer Hall to teach my Chem 1C section in Room E.

At 5:30 p.m., I attended the reception for Ellison Shute at H's Lordship's Restaurant on the Berkeley Marina. I talked to many old friends, including the Shutes, Mr. and Mrs. Wally Reynolds, Mr. and Mrs. Donald Cooksey, Mr. and Mrs. Ash O'Donnell, Mr. Dale Cook (head of Public Information at SAN), Mr. H. T. Herrick (head of the Labor Relations Division at AEC/Washington who was visiting here on business), and Mr. and Mrs. Dan Wilkes. I again invited Bob Thorne to visit us at LBL which he said he would try to do within a few weeks.

*JWH Presentation of Proposed Changes 4/11/72*

The AEC has now expanded its mission into the field of energy and environment. It is vital to the future of the Laboratory that we respond to this change in direction of the Commission. How can the Laboratory most effectively respond? We have reported to you about the changes in the AEC, and we were asked to suggest the mechanism of the Laboratory's response. This suggested program change is our response to your request.

1 First point: our program at LBL now has the opportunity to, and in fact must, seek AEC funding. The role of the Environmental Research Office in coordinating programs should now include AEC programs, as well as those with other agencies like NSF. We anticipate the preparation of a program plan for Fiscal '74. The principle that has guided us in making this proposal is that the AEC itself is going to enter these new areas in a big way, and that we will be faced with strong competition from the other AEC laboratories. Thus, we feel that LBL must make the strongest and most coherent response of which it is capable. Our proposal is based on the interaction we had on our recent trip to Washington. It would be good at this point to hear if the impressions that we carried back from our conversations with Doub, English, Totter, etc., match with those which several of you have just carried back.

2 The second significant change from our present Environmental Research Office is the addition of energy programs. This is a natural change because, one, energy programs, like environment, cut across divisional lines. Example: solar energy. Two, energy and environmental topics often overlap. Example: SO<sub>2</sub> abatement chemistry. Note that the new structure is a program, not a division. This emphasizes the divisional interdependence of the environmental programs and also that much of the work will be carried out in the existing divisions.

3 The third significant change that is suggested is the appointment of an Associate Director for Energy and Environment Programs. The following arguments are made in support of this suggestion. In order to maximize the degree of success of the LBL program, the person responsible for the program must have the maximum possible administrative authority in the following four areas of interaction:

a. Within the Lab, in the development of these programs that cut across divisional lines there will be continuing, if not day to day, interactions with the other associate directors. The negotiations will become a bit harder as the job changes from one only of developing and expediting random proposals to planning a coordinated program aimed at a mission. This is frankly going to be a difficult game, and it will take the cooperation of all the divisions if the Laboratory is to build viable programs in these new areas.

b. Laboratory-Campus interactions: we have had many two-body interactions during the past year, but if these are to be enlarged it will take a different level of negotiation than we have been able to pursue thus far, especially on such a status-conscious milieu as the Berkeley campus. For example, to build an effective program expeditiously in the energy field it may be desirable to bring into the Lab structure a sizeable block of engineers from the campus.

c. We will have to build interactions and working associations with the new AEC divisions. This can be done most successfully if the interactions are carried out by a person who clearly speaks with authority for the Laboratory.

d. Negotiations on the political front relating to the National Environmental Laboratory (NEL) Bill. USE SAME ARGUMENTS AS ABOVE.

We are convinced of the tremendous importance of this job to the future of the Laboratory, therefore it follows that we also feel the Laboratory should try to get the best possible man to do the job. In the last few months we have felt it necessary, in order to advance the program, to make contact with: Sen. Tunney, Rep. Miller, Rep. Waldie (on N.E.L.), Stanley Greenfield (EPA), Commissioner Doub (AEC), Carl York (OST)--these are all people very high in the political structure in Washington. We are convinced that a man of great stature and ability would be most effective in this kind of interaction. Such individuals as Charlie Townes, Glenn Seaborg, Melvin Calvin, and Ken Pitzer come to mind.

Of course, much of the work will be done by staff people, and we would like to continue to make whatever contribution we can to the program. We think we could fit effectively into the structure as we have outlined it, either in the box for program development or for management.

4. The fourth major point has to do with Budget. A budget is required for the planning of new programs, for the writing of major proposals, and to begin to bring to the Lab people in the professional areas that are new to the Laboratory, areas into which the AEC is now moving. To finance the coming development phase of the program it is necessary to set up an overhead charge account to be used at the discretion of the Associate Director.

I then drove to Larry Blake's Restaurant on Telegraph Avenue where I had dinner in the Rathskeller at a table with a group connected with the Department of Civil Engineering and the Berkeley Student Chapter of the American Society of Civil Engineers. Those present were Charles Kahr, President of the chapter, and his fiancée, Professors David Pirtz and Jerome M. Raphael, Assistant Professor Graham H. Powell of the Structural Engineering and Structural Mechanics Division, and Associate Professors Tor Langfeldt Breeke and Keith C. Crandall of the Transportation Engineering Division in the Department of Civil Engineering.

We then walked up to 2401 Piedmont Avenue, a former sorority house which is now co-educational housing. The session was held in the dining room which had been cleared and filled with chairs. After conducting a little business connected with the student chapter, Kahr introduced me and I gave my talk "Atoms on the Hill," illustrated with slides. This was followed by a very intelligent and informed question session, focusing on such matters as the superheavy elements, the practical uses of transuranium elements, the prospects for fusion power, etc.

Thursday, April 13, 1972 - Berkeley

Iz Perlman returned from his trip to Cyprus last night after a delay of several days due to difficulties with his air transportation. He has decided to accept a permanent position in Israel beginning in April 1973.

Silva, Ghiorso and I conferred on progress on superheavy element research plans. The SuperHILAC might have its first test beam next week.

Jerry Howland spent some time in the office today on the Met Lab Section C-1 History; perhaps he will do some work on this after all.

I had lunch in the cafeteria with Hollander, Sessler and Wulf Kunkel to discuss a future expanded program of CTR research at LBL; Kunkel will press on the preparation of a proposal to the AEC on Research on Plasma Heating.

Eric, Suki and I took a hike to the water tank.

Friday, April 14, 1972 - Berkeley

Ed Orlemann and Dave Templeton invited me to give the commencement address at the College of Chemistry graduation exercises on Saturday, June 17. I had to regret because I am scheduled to attend a meeting of the Board of Directors of the AAAS at that time.

From 10:00 a.m. to noon, I attended the meeting of the SuperHILAC Research Group in the conference room of the HILAC Building. Silva gave a description of our plans for chemical work on any superheavy elements that might be produced in the SuperHILAC. Kari Eskola spoke on calculations on the production of superheavy elements by neutron-heavy (secondary) projectiles (NHP's). Poskanzer reviewed the CERN superheavy element experiments and a proposal for a similar effort at

Berkeley. Nurmia described preparations to use nuclear emulsions as detectors for superheavy elements at the end of SASSY.

I had lunch in the cafeteria with Al Ghiorso, Ken Hulet and Dick Hoff.

Darleane Hoffman called me from Los Alamos at 2:30 p.m. in response to my invitation to Bob Penneman to have someone from LASL collaborate with us in the chemical identification of superheavy elements produced at the SuperHILAC. She indicated that she is interested and will talk to Bob who will discuss it further with Al Ghiorso when they see each other next week at the meeting of the Heavy Isotopes Planning Group in Washington.

At 3:10 p.m., I received a call from John Crowley in his capacity as a fellow trustee of the Educational Broadcasting Corporation and chairman of the nominating committee. He asked if I would be willing to and interested in standing for nomination for another three-year term on the Board. I indicated that he could keep my name in on the understanding that I would be able to attend only a fraction of the meetings, since it is increasingly difficult for me to get to the east coast for them.

Catherine Ivanoff from my Chemistry 1C section dropped in for consultation on her work in the course.

Suki and I took a hike to the water tank. Eric's friend Chris Phillips came by to spend a few hours with him.

Saturday, April 15, 1972 - Davis - Lafayette

Helen, Eric, Dianne, and I drove to Davis for Picnic Day, taking the snakes and large tortoise with us. We met Dave in front of VAL bookstore, then carried the animals to the front of Wickson Hall where an exhibit was to be set up. The five of us then went to the starting area of the parade to watch it. Here we saw Mr. and Mrs. Edward Rosston (our long-time neighbors on Happy Valley Road) and their two daughters and Mr. and Mrs. David Gardner.

After the parade, we were joined by E. Coli (Steve's dog), who was wandering around, and returned to Wickson Hall. Dave opened his exhibit and the rest of us toured the exhibits (on enology, pomology, viticulture, etc.) in Wickson Hall.

We then went to Hammarskjold House where we met Steve (and were later joined by Dave) to eat our picnic lunch with Dr. and Mrs. Monti Reynolds, some students, and parents of students. We were joined briefly by Judy New and her friend Jo Ann Suter who had driven from Reno (where they are attending the University of Nevada). Others we met were Dr. and Mrs. Fine and their son Joel (who will live in Hammarskjold House next year), Paul Grant (a finishing physics major starting graduate work at Davis next year), Dave Wemmer (a junior chemistry and mathematics major who may go to Berkeley for graduate work), Denise Weeks, her younger sister Rene, and John Morris.

After lunch we visited a number of picnic day events, including the law school. Helen, Dianne and I watched the Davis-San Francisco State soccer game, Dave joined us to see a multi-school trackmeet, and Steve and Eric attended a rock concert. We ran into Mr. and Mrs. Means; she is Dianne's art teacher at Stanley School.

Dave took over again at his snake exhibit, which his friend Carol Minter had been running during the afternoon. At the end of the day, we delivered the extra snakes to Dave's room, said goodbye to him, delivered Steve to his apartment and said goodbye to him; then we and the reptiles drove home to Lafayette, arriving at 6:20 p.m. Eric did the driving both ways.

Suki and I took a hike to the water tank.

Sunday, April 16, 1972 - Lafayette

I worked on my book, Travels in the New World, and read articles connected with my research.

I watched on TV the launch of Apollo 16 from Cape Kennedy at 9:54 a.m. (PST). Astronauts John W. Young, Charles M. Duke, Jr., and Thomas K. Mattingly II were aboard. I also watched the S.F. Giants-Houston Astros baseball game from Houston--the Giants won, 10-6--and the Milwaukee Bucks-Los Angeles Lakers NBA semifinal basketball game, which the Bucks won 114-88, evening the series to 2-2.

Eric, Suki and I took a hike in Redwood Regional Park along the West Ridge Trail, the Tres Cendes Trail, and the Steam Trail. We drove home on Pinehurst, Canyon and Moraga Roads, passing through the town of Canyon and its redwood grove on the way.

Lynne and Bill dropped by after dinner and I helped Bill with some of his Hayward State Chemistry 1C problems. Lynne has an offer of a National Institute of Mental Health fellowship at Purdue University (in her field of clinical psychology); she is investigating whether Colorado State will offer her one. (We got a letter from Pete saying he has been rejected by the Law Schools of Harvard and George Washington University, but Georgetown University is still considering his application. Eric has not yet heard from Harvard or Yale.)

Monday, April 17, 1972 - Berkeley

I brought Earl Hyde up-to-date on the events that occurred during his absence in Boston (ACS meeting) and Washington (AEC) last week.

I held my office hour in 446 Latimer Hall from 11:00 a.m. to noon. I had lunch with the Chemistry Department faculty in the Howard Room of the Faculty Club, after which I taught my Chem 1C section.

I attended the Nuclear Chemistry Seminar at 4:00 p.m. where Stan Prussin talked on "UCB Recent Work in Delayed Neutron Emission."

The x-ray at Kaiser Hospital in Walnut Creek showed that Dianne suffered a small break in her right forefinger as the result of a basketball playing accident last Friday afternoon; they set it in

splints. Eric received word from Harvard today that he is on the waiting list for admittance.

Tuesday, April 18, 1972 - Berkeley

I wrote to Gunter Herrmann at Mainz about the possible arrival dates of Jens Kratz (correspondence attached).

I met with Hyde and Perlman to go over the salary increases for our non-faculty professional staff that we will recommend for next academic year.

Burkhard Fricke arrived last night and came up to the Lab a little after 10:00 a.m. I took him up to the SuperHILAC and showed him the progress on its construction. Bob Main helped explain the operation. Today happens to be the day when we are trying to obtain our first beam.  $N^{14}$  ions from the 800 Kev injector were put through the prestripper, but when the quadruple steering magnets were turned on, the beam was lost. The work was continuing on the solution to this problem when we went by Bob Silva's office for a discussion of the electronic structures and chemistry of the superheavy elements, after which we went to the cafeteria. Here we joined the regular Tuesday luncheon of the Nuclear Physics group, which included Bill Myers, Norman Glendenning, Wladyslaw Swiatecki, Chin-Fu Tsang, Hans Krappe (the new postdoctoral from the Hahn-Meitner Institute), and many others.

At 1:10 p.m., I went to the meeting of the Associate Directors in the Director's Office. Present were Bill Wenzel, Melvin Calvin, Harold Fidler, George Pappas, Edwin McMillan, Bob Thornton, Rolf Muller (IMRD), Elmer Kelly, Robert Hinckley, and Baird Waley representing James Born. Hollander and Sessler were present and they continued their description of possible organizational structures for the planned work on environment and energy in the Laboratory. We agreed George Pappas would put together combined proposals from Hollander-Sessler, Calvin and Born in response to a request for proposals on environmental research received from John Totter (AEC/Washington). This response is due in Washington by April 20.

After Hollander and Sessler had left, we discussed further the organization of the effort. With the strong support of Calvin and Pappas, I pressed for the appointment of Hollander as an Assistant Director of the Laboratory to head this effort, with a starting budget in which some of the support would come from the various divisions and some from overhead. This met with general support, and it looks like the effort may have finally been launched.

At 2:15 p.m., I met in my office with Ken Raymond and we agreed that we would jointly sponsor work by a graduate student (supported by the Nuclear Chemistry Division) and one or two postdoctorates (supported by Raymond's NSF contract) in the general field of magnetic measurements on the structure of the organometallic complexes.

At 2:30 p.m., I met with Warren Henry of Howard University and Harold Wilson (in charge of affirmative action in the Lab). Henry is planning to continue his work on the measurement of the magnetic

April 18, 1972

Dr. Günter Herrmann  
Institut für Anorganische Chemie  
und Kernchemie  
Kernreaktor  
Johannes Gutenberg-Universität Mainz  
6500 Mainz, Germany

Dear Günter:

This is in reply to your letter of April 7, 1972. An arrival date of July 1 for Jens V. Kratz will certainly be fine. However, if he can arrive earlier, sometime in June, this would have the advantage that he could participate in the preparation of the chemical laboratory. There will be preparatory work that must be done and which can be carried on even though the SuperHILAC will be shut down during much of June; the remainder of our nuclear chemistry division members will be operating in full force during June.

I understand that our Foreign Visitors Office is already in communication with Dr. Kratz about the arrangements for his visa.

We are of course very pleased that Norbert Trautmann plans to participate in the chemical experiments on hahnium.

As you anticipated, I will be attending the symposium in Moscow in September. My travel schedule is yet to be worked out, and I will certainly keep in mind your kind invitation for me to visit you in the Rhein-Main region.

With best regards,

Cordially,

Glenn T. Seaborg

GTS/sms

bcc: Earl K. Hyde



INSTITUT FÜR ANORGANISCHE CHEMIE  
UND KERNCHEMIE  
KERNREAKTOR  
JOHANNES GUTENBERG-UNIVERSITÄT MAINZ

6500 MAINZ, April 7, 1972  
FRIEDRICH v. PFEIFFER-WEG 14 H/Bo  
POSTFACH 39 80  
RUF: 171 - BEI DURCHWAHL 17879

Professor Glenn T. Seaborg  
University of California,  
Lawrence Radiation Laboratory,  
Berkeley, California 94720, USA

*As of 4/14/72*

Dear Glenn,

I am very glad that you kindly agree to accept Jens V. Kratz for an extended stay in your group. The earliest time he could come would be about June 1st, but since your laboratory will be closed for three weeks starting in the middle of June, as Dr. Ghiorso mentioned in a recent letter, July 1st might be more appropriate. I would appreciate your suggestions. Jens Kratz would also require the DSP-66 formular to get his visa from the US Consulate at Frankfurt.

As I pointed out in the enclosed letter to Dr. Ghiorso, Norbert Trautmann is still extremely interested to participate in the chemical experiments on hahnium and there will be no problem for him to come to Berkeley for such a relatively short period. It seems to me that this may happen in July, at the time of Jens Kratz arrival. This would be a fortunate coincidence since Norbert Trautmann could then help him to become familiar with the situation in Berkeley.

I guess that you will attend the meeting in Moscow arranged by V.I. Spitzyn for September of this year. I received also an invitation and I shall participate. Would your schedule permit you to make a stop here in the Rhein-Main region? GSI is located only 10 miles from Frankfurt airport!

With best regards,

Sincerely yours,

*G. Herrmann*

Encl.

( G. Herrmann )

*\* Please see previous letters  
already on file.*

INSTITUT FÜR ANORGANISCHE CHEMIE  
UND KERNCHEMIE  
KERNREAKTOR  
JOHANNES GUTENBERG-UNIVERSITÄT MAINZ

6500 MAINZ, April 7, 1972  
FRIEDRICH v. PFEIFFER-WEG 14  
POSTFACH 39 80 H/Bo  
RUF: 171 - BEI DURCHWAHL 17879

Dr. A. Ghiorso  
University of California,  
Lawrence Radiation Laboratory,  
Berkeley, California 94720  
USA

SD 4/14/72

Dear Dr. Ghiorso,

I regret very much that we shall not meet at Manchester and here at Mainz, but I think that everybody will understand your decision to cancel your trip to the Manchester Conference.

With regard to the hahnium experiments we would like to suggest that Norbert Trautmann should come to Berkeley for the time required for performing these experiments. He is extremely interested to participate in these exciting experiments. Jens Kratz could assist, if you feel that some additional man-power would be helpful, but it is left to the staff of the laboratory, of course, to decide on what kind of work he should put his emphasis.

You mentioned plans to look for elements 106 and 107. I should mention that Norbert Trautmann has already worked out a fast chemical procedure for Tc and Re which should be applicable to element 107. You will soon receive a preprint on this work. Now he is going to do fast chemistry with Mo, and again the technique he has in mind should be applicable to element 106. Thus, he could participate in chemical experiments on these elements. I would not expect problems to get a leave of absence for him for relatively short periods; to get it for a long period is much more difficult.

I just received some interesting information about the situation at Dubna via a colleague who met Flerov a few days ago at Warsaw.

Flerov seemed to be rather discouraged since the strong efforts to detect superheavies by bombarding heavy elements with the xenon beam remained unsuccessful. However, it is my impression from what I have heard that the experiments were relatively sensitive only for a rather limited range of half-lives, say between a few hours and days. The Dubna group is now going to measure formation cross sections of known nuclides in xenon bombardements. Their latest estimate of the formation cross section of superheavies via a fusion-fission process is  $10^{-35} \text{ cm}^2$  !

Sincerely,



( G. Herrmann )

Cc.: Professor G. T. Seaborg

susceptibility of plutonium metal. He will use Pu<sup>242</sup> first and then hopes to use Pu<sup>244</sup> when it is available. He has learned that the Giaugue magnet in the Low Temperature Laboratory on the campus will not be restored to the degree required; so he is making arrangements to use some of the magnets in LBL. He said he will discuss this with Director McMillan this afternoon. He said he has found a technician in the Nuclear Chemistry Division who will help him encapsulate the Pu<sup>244</sup> in a metallic aluminum container. I said that we would cooperate in every way to make his work possible.

I attended the special theory seminar given by Burkhard Fricke on "Prediction of Physical and Chemical Properties of Superheavy Elements" in Room 191 of Building 70.

At 5:15 p.m., on my way home, I stopped by the SuperHILAC Building and learned that they have succeeded in coasting a beam through the prestripper.

Eric received word from Yale University saying he had been rejected for admission. He, Suki and I took a hike to the water tank. I watched the Lakers beat the Bucks on TV in the fifth game of the NBA basketball semi-finals, 115-90. Lynne is accepting the offer from Purdue University.

Wednesday, April 19, 1972 - Berkeley

My 60th birthday!

I conferred with Fricke, Hyde and Silva about the oxidation states of elements 110-118. I also conferred with Edelstein about our work on determination of magnetic susceptibility and paramagnetic resonance of organometallic actinide compounds.

I had lunch in my office, then taught my Chem 1C section; we gave the first midterm examination today.

I returned from my teaching to meet my 3:00 p.m. appointment with Melvin Calvin. As I was sitting in my office, to my immense surprise, a large group entered with a birthday cake and presents--Helen included! Apparently this was all engineered by Sheila. Also present were Joe Cerny, Norman Edelstein, Bernie Harvey, Art Poskanzer, Dave Shirley, Stan Thompson, Dick Diamond, Iz Perlman, Dave Templeton, Earl Hyde, Jack Hollander, Allan Zalkin, Amos Newton, Maynard and Helen Michel, Herman Robinson, Elinor Potter, Stretch Conzett, Bob Main, Melvin Calvin, and Bob Silva.

The presents I received were an assortment of U.S. Geological Survey topographical maps of places in California, a football autographed by those present, a set of slides "for all occasions" (compiled by Elinor Potter) with humorous captions, and a birthday card with a poem made up by Kathy McCracken of the staff. I also received telegrams from Al Ghiorso and Alexander Van Dyken's staff in Washington and a letter from Sam Markowitz.

I responded informally by reading off the slide captions and the poem. I took note of my long association with Calvin and Thompson.

After I had blown out the five (5) candles, Sheila cut the cake which was enjoyed along with punch by all present. In order to make honest my appointment with Calvin (which had only been set up as a vehicle for making sure I would be in my office at 3:00), we discussed yesterday's Associate Directors' meeting and the problems that we are encountering in getting an organization set up to conduct the proposed Lab program in the field of energy and environment.

On the way home, I dropped by the SuperHILAC and learned that they were on the verge of getting a beam through the entire machine.

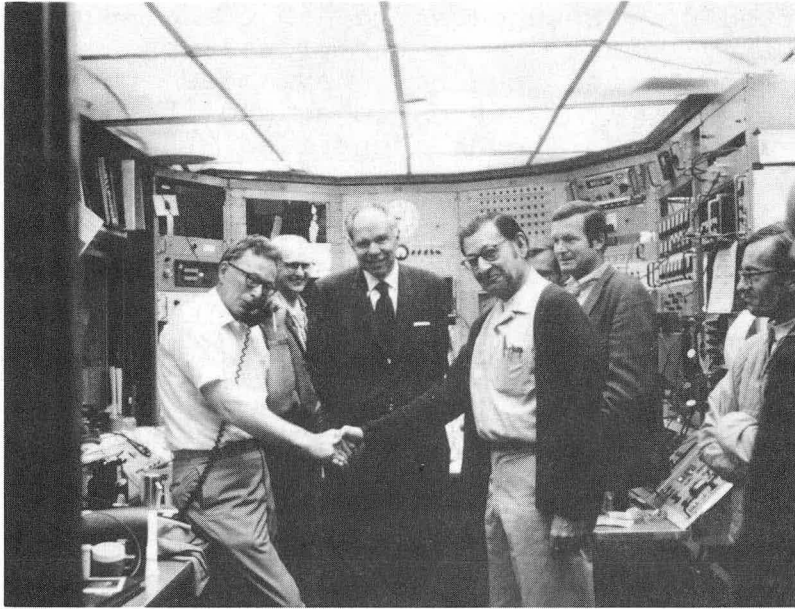
I took a hike to the water tank with Suki.

Thursday, April 20, 1972 - Berkeley

This morning, Bob Main called me at home a few minutes before 8:00 a.m. to say that they had just succeeded in accelerating  $N^{14}$  ions of +3 charge through the entire SuperHILAC to the full energy of 7.5 Mev per nucleon and attained an intensity of about 1 microampere per pulse. Bob, Birt Kortegaard (the chief of the SuperHILAC operating crew), Frank Selph (the general beam dynamics man), Bob Benjegerdes, and the entire SuperHILAC operating crew were up all night working on it. They actually got the first indication of the beam last night on my birthday. This of course is a milestone and indicates the machine is basically sound. An oscilloscope picture of the beam pulse was taken for use in the Laboratory magazine The Magnet and other purposes. I obtained a copy.

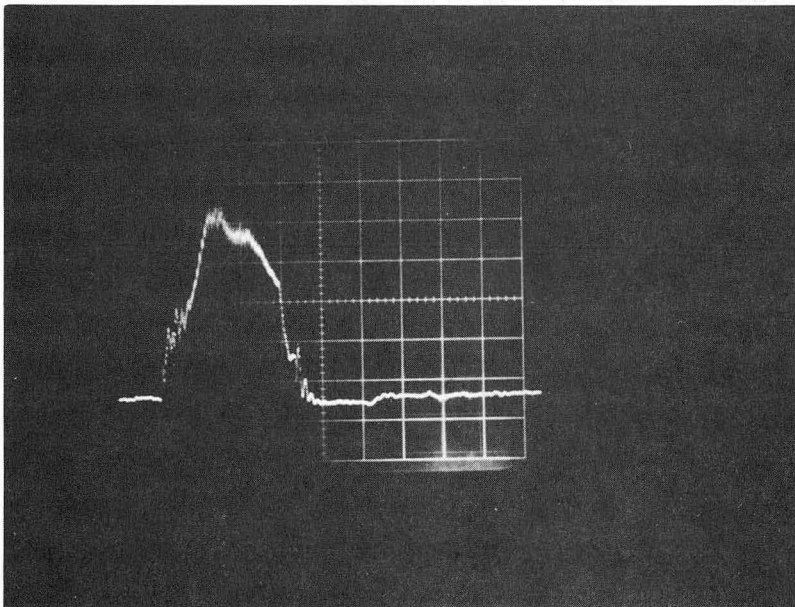
Upon arrival at work, I went directly to the SuperHILAC. A number of pictures were taken of the people present in order to record this historic event. Ghiorso arrived during the photograph session (he had been in Washington) and joined me in congratulating all those present. He told me and Earl Hyde (who had also arrived) about the results of his talks in Washington with George Kolstad and others. He raised the question of obtaining support for the SuperHILAC operation from the Physics department Division of Research, and Kolstad indicated that this might be possible providing some kind of special organization for low energy physics would be set up at LBL.

Professor Stanley Prussin of the Department of Nuclear Engineering dropped in at 10:00 a.m. (He is a former member of Jack Hollander's group here on the hill and obtained his Ph.D. with Wayne Meinke at the University of Michigan.) We discussed his joining my group to work on the chemical identification of the superheavy elements and other radiochemical studies connected with the operation of the SuperHILAC. He and a graduate student named Chris Cann will possibly join in this effort, the graduate student to be supported by our budget. The extent of his participation will depend on whether he gets support for his fission product work either from AEC or NSF, in which case his participation up here would be less. He would start in the summer, but is taking the fall quarter off to go to Mainz to work with Professor Herrmann! I indicated that this would constitute an excellent additional source of liaison with Herrmann in his work at Mainz.



Robert Main, Chet Hatch, Seaborg, Albert Ghiorso,  
[unidentified], Rudy Johnson, Bert Kortegaard:  
April 20, 1972.

SuperHILAC First Beam: Oscilloscope--4/20/72.



Thursday, April 20, 1972 (con't)

At 10:50 a.m., Robert Thorne, Manager of the AEC SAN Office, called to notify me that the SAN Office had sent a letter to the Lab saying that they would like to get our safety procedures before the SuperHILAC was started up. He understood that the SuperHILAC is now started up, but they don't have the procedures. I told him that technically it has not started up--they have made the adjustments to the point where they know it is ready to go and it is shut down while final preparations are made. Thorne identified this as a pre-operational checkout. I assured him that we will get the procedures to SAN before starting up, and he indicated that all they would require would be a rough draft to give us the go-ahead. I said I would get on it right away. I reminded him about his coming up for a visit. He said that he has been attending the budget sessions on the high energy physic programs and hopes to get up to the Laboratory within the next two or three weeks after he gets back from Washington.

At noon I drove by the Carnegie Commission offices at 1947 Center Street in Berkeley and went up to Clark Kerr's office on the 5th floor to meet him for a luncheon appointment. He showed me through his office, with the pictures of the various campuses of the University of California on the wall, and then introduced me to a number of his staff, including his administrative assistant Virginia Smith, whom I had met before. We then drove to the Claremont Country Club in Oakland, where we had lunch in the main dining room. During lunch, I urged him to resume his habit of attending the summer encampments at the Bohemian Grove, even if it meant changing to another camp group. I mentioned to him that we hoped to have a picture taken of all five Chancellors of the Berkeley campus on one of Roger Heyns' trips to the Bay Area. We also spoke of the Berkeley campus--how it was during our days as administrators and how relatively unchanged it is today.

Jerry Howland dropped by in the late morning, staying until 2:30 p.m., to read more material on the Met Lab Section C-1 History; he is taking some of it home to read there.

At 4:20 p.m., I met with Burkhard Fricke, Rolf Mehlhorn and Norman Edelstein to further discuss the oxidation states of the superheavy elements, particularly elements 110, 111 and 112. We were joined at 4:30 p.m. by Leo Brewer to continue the discussion. We decided that element 112 will be quite noble and perhaps also quite volatile because of the tight binding of all its electrons.

At 4:45 p.m., I reached Al Ghiorso on the phone to tell him about my call from Bob Thorne; Albert was not impressed.

I took a hike to the water tank with Eric, Chris Phillips and Suki. Lynne and Bill came by and participated with Helen, Eric, Dianne, and me in my birthday dinner. I received a number of presents--a billfold from Dianne, a necktie and an Oski doll from Lynne and Bill, books (Ball Four by Jim Bouton and The Wit and Wisdom of Archie Bunker from Eric and The Vantage Point by Lyndon B. Johnson from Helen), and candy from Helen. There was a birthday cake, and a good time was had by all.

Friday, April 21, 1972 - Berkeley

Harold Fidler came to my office at 8:45 a.m. to get my recommendations for the salary increases for Albert Ghiorso, Bernard Harvey, Earl Hyde, and Stanley Thompson, to be effective July 1, 1972. These are at the salary range level where they must go to the Regents for approval.

Hyde and I met with Duane Turner (of the new AEC Division of Plans and Program) and George Pappas at 9:15 a.m. to describe our Nuclear Chemistry Division research program.

At 10:00 a.m., I attended the meeting of the SuperHILAC Research group in the conference room of the HILAC Building. Hyde described the research program that he and Richard Eppley plan for short-lived alpha emitters in various parts of the periodic table. Moretto talked on the effect of shell structures on fission probabilities. Bill Jackson spoke on the design of fast circuitry for the SASSY multiwire proportional counters.

The Program Committee of the Nuclear Chemistry Division met in my office, with bag lunches, from 12:00-1:15 p.m. Those present were Al Ghiorso, Dave Templeton, Norman Glendenning, Kenneth Street, Jack Hollander, Dick Diamond, Dave Shirley, Stan Thompson, Art Poskanzer, Norm Edelstein, Earl Hyde, Joe Cerny, and Iz Perlman. (Bernie Harvey was absent, and Al Ghiorso left immediately after his announcements.) Al announced that at 7:00 a.m. on Thursday, April 20, they had sent the first full beam through the SuperHILAC and established that the machine works. Iz expressed congratulations on the part of the committee. Al further reported briefly on his meetings in Washington with Kolstad, Van Dyken and others.

Earl inquired generally about the effects of the "strike" of the building trades workers. The Laboratory has not been notably affected thus far, since management is bringing in such supplies as the liquid nitrogen that we need. Earl then briefly reviewed the pending status of our deliberations about establishing a Division review committee and plans for ensuring personnel vacations are taken before the end of the fiscal year. Ken Street discussed our budget status. I outlined the glacial progress to date on getting the Energy and Environment Program off the ground, and Hollander and I described some of the problems involved. Joe Cerny reported on the status of the Summer Program.

At 2:45 p.m. I called Robert Latimer to inquire why he had--in his role as Director of Safety Services--ordered the entire SuperHILAC shut down last night, including the Cockroft-Walton source so that they couldn't make any experiments. He explained that he had an order from somebody in the AEC/SAN office that there should be no radiation produced by the machine until the operating manual was approved. He has all of the material for this in the SAN office now and is going down at 3:00 to meet with them about it. I cautioned him that there was a widespread feeling that they were indulging in bureaucratic dogma, pointing out that without testing, those at the SuperHILAC cannot even find out whether there is something wrong with the machine that needs fixing.



George Pimentel dropped into the office at 3:00 p.m. to bring the good news that he had just received a letter from Guy Stever agreeing to the termination of NSF involvement with the CHEM Study project and turning over future monetary receipts to the University of California. We were joined shortly by Dave Ridgway. Pimentel and I agreed that the money should be used, as a first priority, to support the continuing small CHEM Study activities centered in the Lawrence Hall of Science. After this, a small additional reserve for this purpose is to be set aside; then, the remainder should be used to support research in science education. We agreed that some should go to Harvey Mudd College, and Pimentel will suggest a split of 60% to the University of California at Berkeley, 35% to Harvey Mudd College (which he will explore with Art Campbell there), and 5% to the University of Utah Department of Chemistry for the memorial fund there dedicated to Lloyd Malm. We then agreed that the residual part of the income for science education at UCB (that is, the 60% of the income beyond that required for the support of the Lawrence Hall of Science activity and accompanying reserve) might best be under the control of Pimentel, subject to consultation with me. He will make this suggestion to Chancellor Bowker's office and proceed to try to get clearance from that office and the Regents to proceed.

Eric, Suki and I took a hike to the water tank.

Saturday, April 22, 1972 - Lafayette

I worked in the yard in the morning, then after lunch, watched the sixth game of the NBA semifinal, which Los Angeles won 104-100. Eric and I played nine holes of golf at the Contra Costa Country Club; Eric shot 62, I 49.

Sunday, April 23, 1972 - Lafayette

I worked in the yard and on the preparation of my Davis and Los Alamos Commencement addresses and my Physical Society talk on "The Superheavy Elements."

Monday, April 24, 1972 - Berkeley

I called Joe Lewin at Oak Ridge at 9:00 a.m. to tell him I would be there on May 2. He told me that the Soviet trip report has been approved for printing, but is now the victim of a backlog in the workload of Oak Ridge's Technical Information Center. He briefly outlined the plans for the front section of the book, of which he is sending me a copy. At Oak Ridge, he has been working in connection with Bob Dreyer, Charles Bruce and Wert Pearson. In Washington, his contacts are Joe Gratton and John Harris.

Bob Latimer called to tell me that AEC/SAN has accepted our revised operating manual. Their letter authorizing us to turn on the SuperHILAC will be delivered by hand this afternoon; in the meantime, he was told that he could give verbal clearances so that the work could be resumed.

I held my student office hour in Latimer Hall from 11:00 a.m. to noon, then had lunch with the Chemistry Department faculty in the

Howard Room of the Faculty Club, followed by teaching my Chem 1C section in Room E.

I wrote to Donald E. Hogeland, Chairman of the Nominating Committee of the American Swedish Historical Foundation, to say I would be pleased to accept nomination as Governor of the Foundation.

Eric, Suki and I took a hike to the water tank.

Tuesday, April 25, 1972 - Lafayette - Washington

Helen drove me to the San Francisco airport where I boarded TWA Flight No. 64, which left at 9:15 a.m. and arrived in Washington at 4:50 p.m. I rode in a taxi with Wally Haas, Jr. (who went to the Madison Hotel) to our house at 3825 Harrison Street; this gave us a chance to talk about UCB affairs. I learned that the Haas family is donating sufficient funds to the University to refurbish and extend the Men's Faculty Club, combining it with the Women's Faculty Club; it will be named after Clark Kerr and Roger Heyns.

I found the house very quiet and learned when Jane returned from shopping that Pete was still asleep. He is working the graveyard shift, and Jane will begin to as well tonight, at Washington Psychiatric Institute. The three of us had dinner together. After I went to bed, they left for work.

Wednesday, April 26, 1972 - Washington

I took a taxi to the Carnegie Institution of Washington building (1530 P Street, N.W.). Here the Committee on Council Affairs of AAAS met in Room 308 with President-Elect Leonard Rieser presiding. Also present were Daniel Aldrich, David Davis, Ward Goodenough, Garrett Hardin, Stanley Marshall, Homer Newell, Fred Singer, George Spurgel, Jr., and William Bevan (John Cantlon was absent).

As nominees for the Committee on Nominations and Elections, we chose James Coleman and G. Allen (with Fred Eggan, Robert Solow and Carl Swanson as alternates) for one place and Dorothy Bliss and T. C. Byerly (with Henry Eyring, Bradford Stanerson and J. Brooks as alternates) for the other places. Frank Wood's suggestion for a periodic AAAS review of the research funding activities of various governmental agencies was referred to the Ad Hoc Committee on Support of Scientific Research.

We all had lunch at La Fonda (a Mexican restaurant at 17th and R Streets); this was a time-consuming affair lasting from noon until about 2:00 p.m.

We resumed our meeting with a discussion of the revised bylaws. We decided to focus on the role of the sections, the role of the Boards in approving statements made in the name of the AAAS, the role of the electorates, and methods of nominations. This will be discussed at a number of special meetings of the Committee.

From 4:00-6:30 p.m., I presided over a meeting of the Board of Trustees of Science Service at the headquarters (1719 N Street,

N. W.). Present were Allen Astin, Bowen Dees, Julius Duscha, Milton Harris, Gerald Holton, Jacob Rabinow, Byron Riegel, Ted Scripps, Athel Spilhaus, Gerald Tape, Don Harless, Ken Frazier, Ted Sherburne, and Dorothy Schriver. There was much discussion of the future program of Science Service, especially in the area of the Public Understanding of Science, and the need to make changes and innovations to respond to current need in the United States. The next meeting (June 16) will be devoted to a discussion of this topic. We discussed the possibility of General Motors' supporting the International Science and Engineering Fair). We approved the promotion of Ken Frazier from Managing Editor to Editor of Science News.

I rode home to Harrison Street with Dorothy Schriver. Here I awakened Pete and Jane, who had returned home from last night's graveyard shift after I left this morning. Jane prepared dinner, and the three of us ate together.

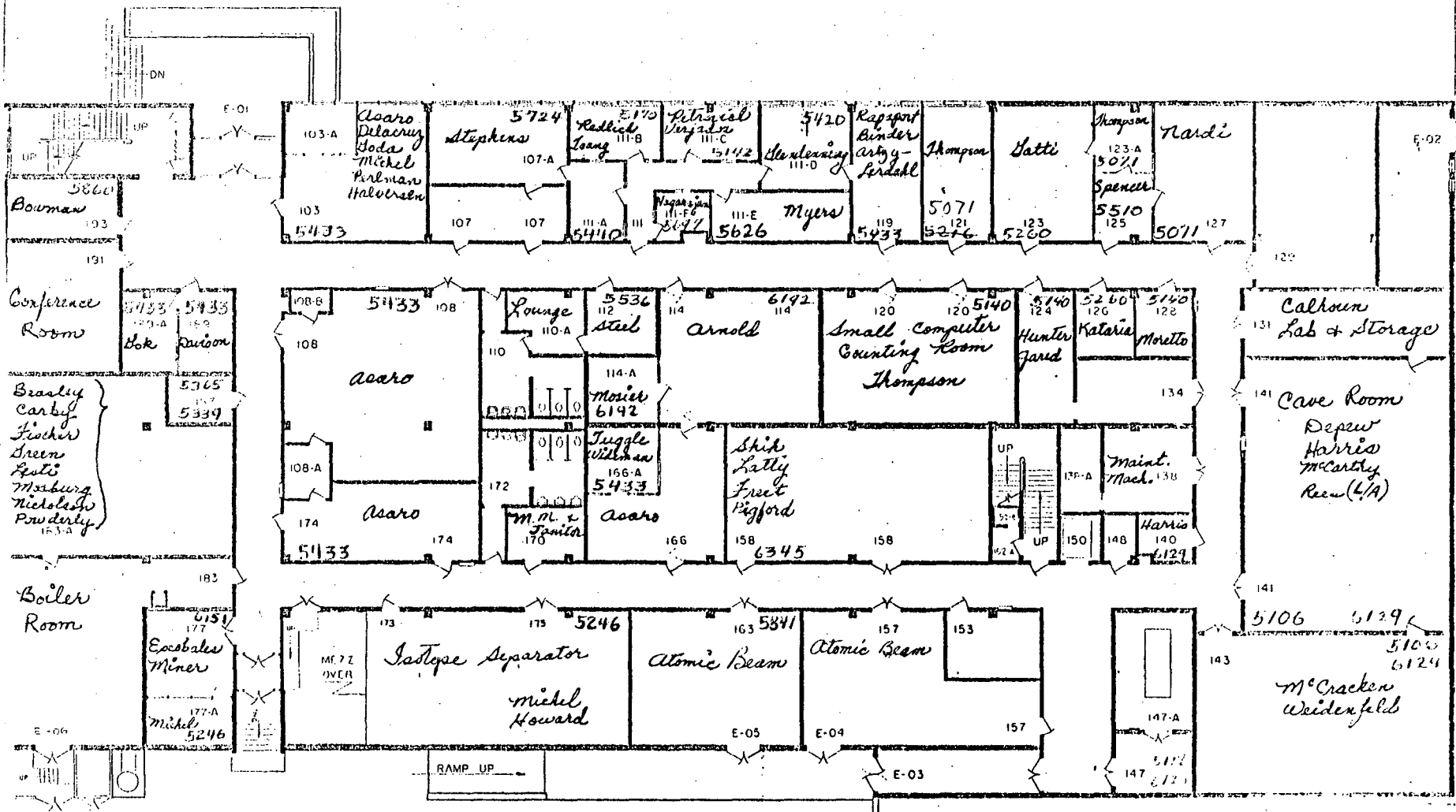
I called Stan Schneider and Justin Bloom to discuss the status of their and my work. I agreed, in a phone conversation with Dr. Bob Leonard (Nuclear Science and Engineering Department, Catholic University), to give a luncheon talk on the Transuranium Elements to the high school student group at the National Bureau of Standards on Saturday, October 21. I wrote a letter to Senator Allen Ellender inviting him to the opening ceremony of the International Science Fair in New Orleans next Tuesday night, May 2. I watched President Nixon on TV at 10:00 p.m.; he announced he will continue air and naval bombardment of North Vietnam.

Thursday, April 27, 1972 - Washington

I attended a meeting of the AAAS Committee on Nominations and Elections at AAAS headquarters. Present were Bevan, Aldrich, S. C. Kendeigh, Lora M. Shields, K. C. Spengler, and Leonard Rieser. I served as chairman.

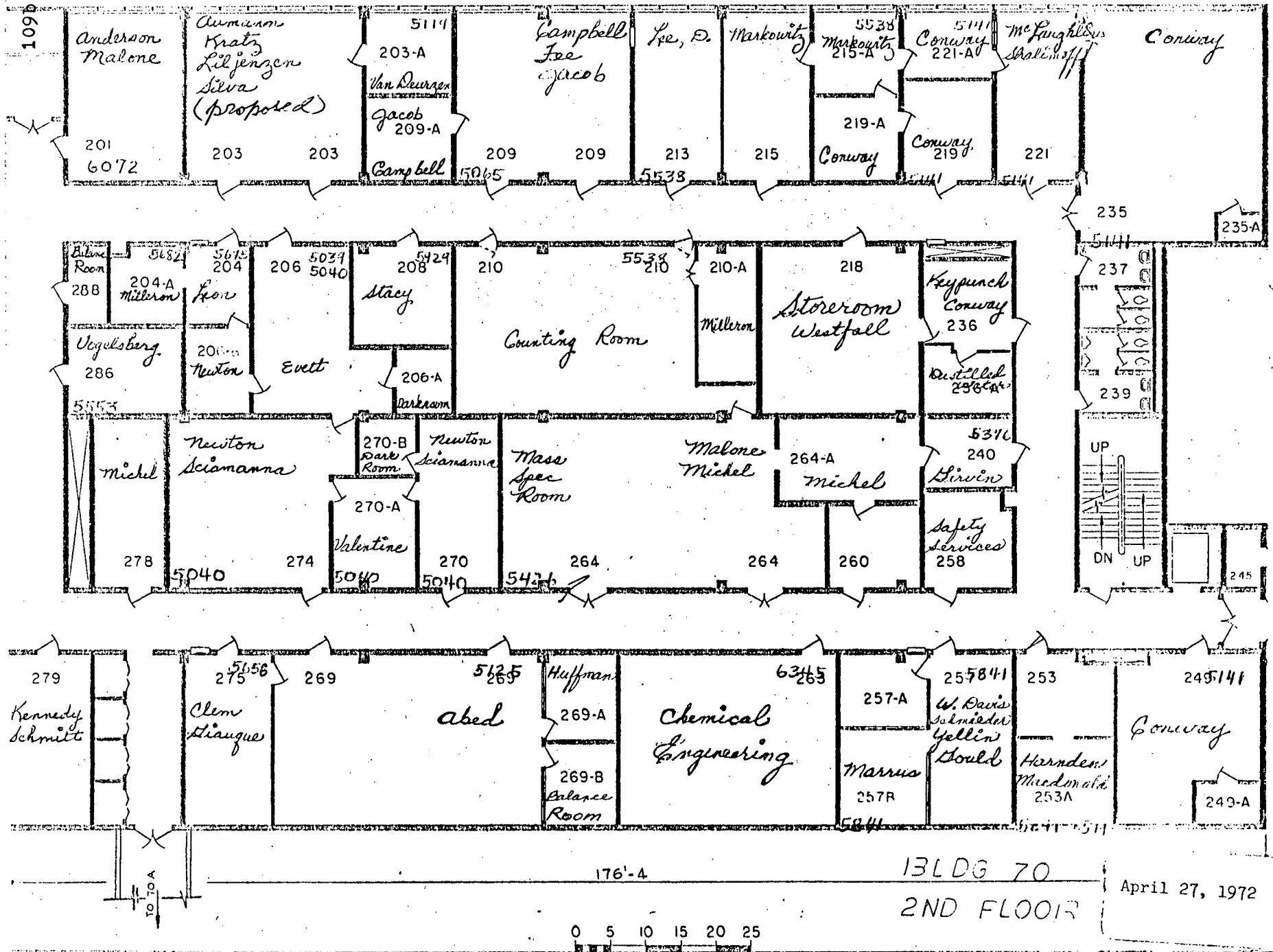
Our selections were: for President-Elect, Frank Long and Ken Thimann with alternates Roger Revelle, Dick Bolt, and Bill McElroy in order; for Board of Directors, Dick Bolt, Dixy Lee Ray, Emilio Daddario, and Warren Washington with alternates Revelle, R. L. Metcalfe, Herbert Borman, and Lloyd Ferguson; for Committee on Council Affairs, Herbert Friedman, George Spurgel, Dorothy Bliss, Deborah Wolfe, Ed Creutz, and Irma Duncan with alternates Stanley Marshall, Elizabeth Roemer, Lloyd Page, F. D. Lawrason, Ed Wenk, and Roy Young.

After the meeting, Rieser, Bevan and I went to the Cosmos Club where we had lunch with Arthur K. Solomon, AAAS representative on the U.S. National Commission for UNESCO, and Al Baez, who worked at UNESCO for a number of years. We discussed the need for enhanced AAAS-UNESCO relations as part of the AAAS foreign office that I am advocating. We also discussed the possibility that a symposium on UNESCO and the State Department at the time of the December AAAS meeting might constitute the State Department's involvement that Herman Pollack and Bill Taft are negotiating. Roger Heyns, who was lunching at the Club, dropped by to greet us, as did Gerald Johnson. I discussed our proposed LBL research program on energy (solar, geothermal and coal gasification) with Gerry, who will be visiting LBL on May 18-20.

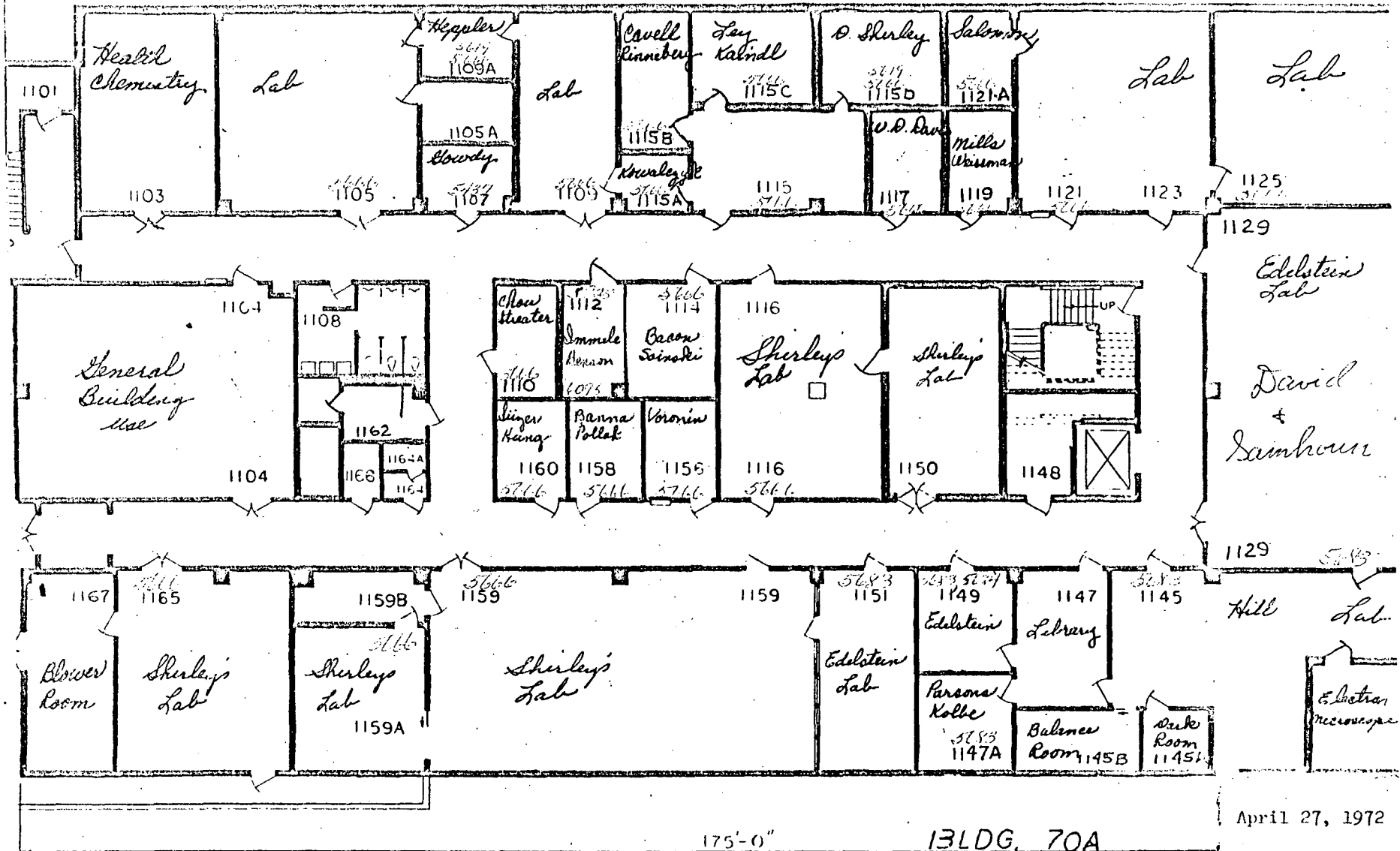


April 27, 1972

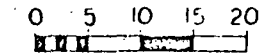
13BLDG 70  
1ST FLOOR



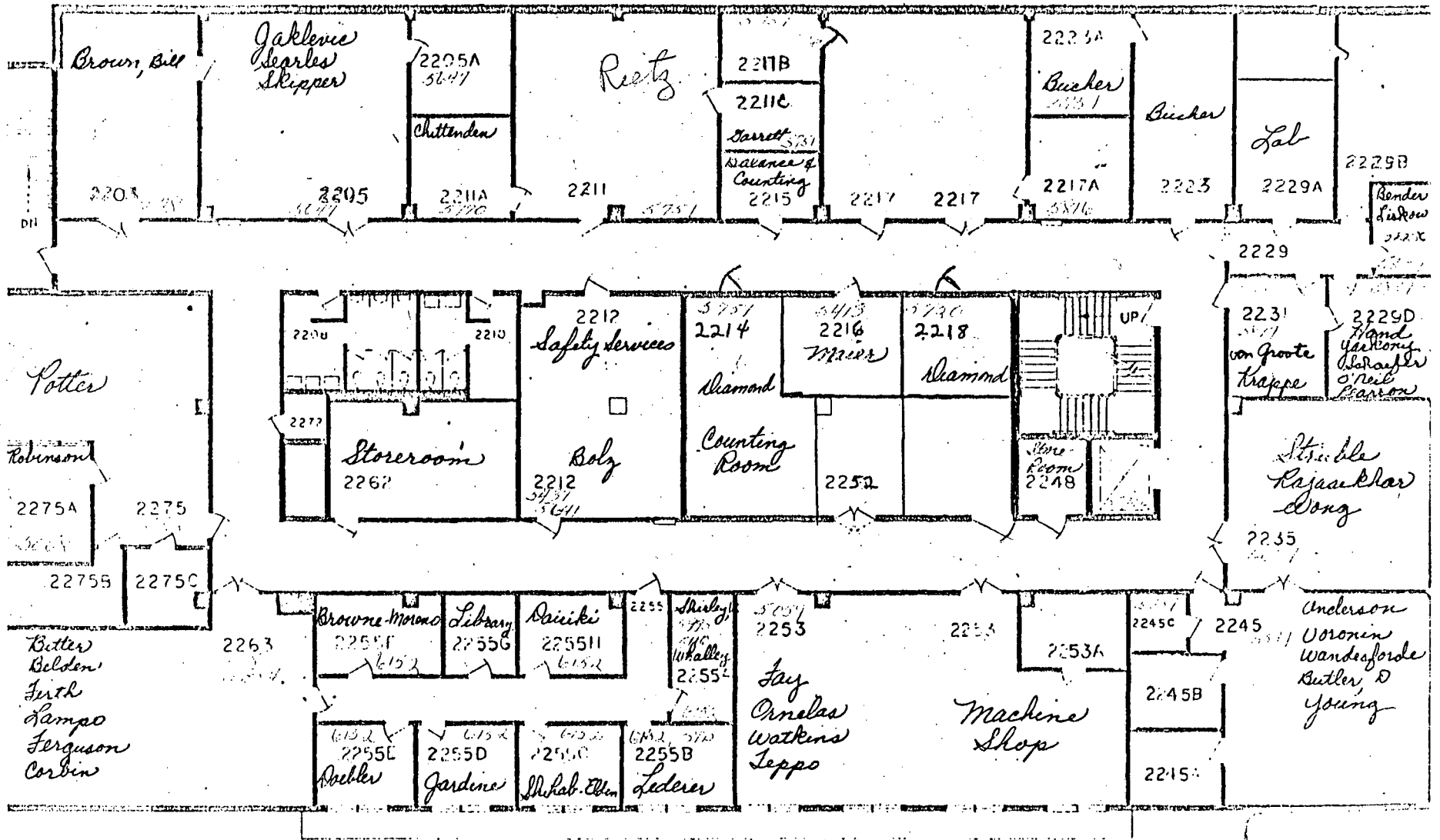
109c



April 27, 1972

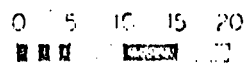


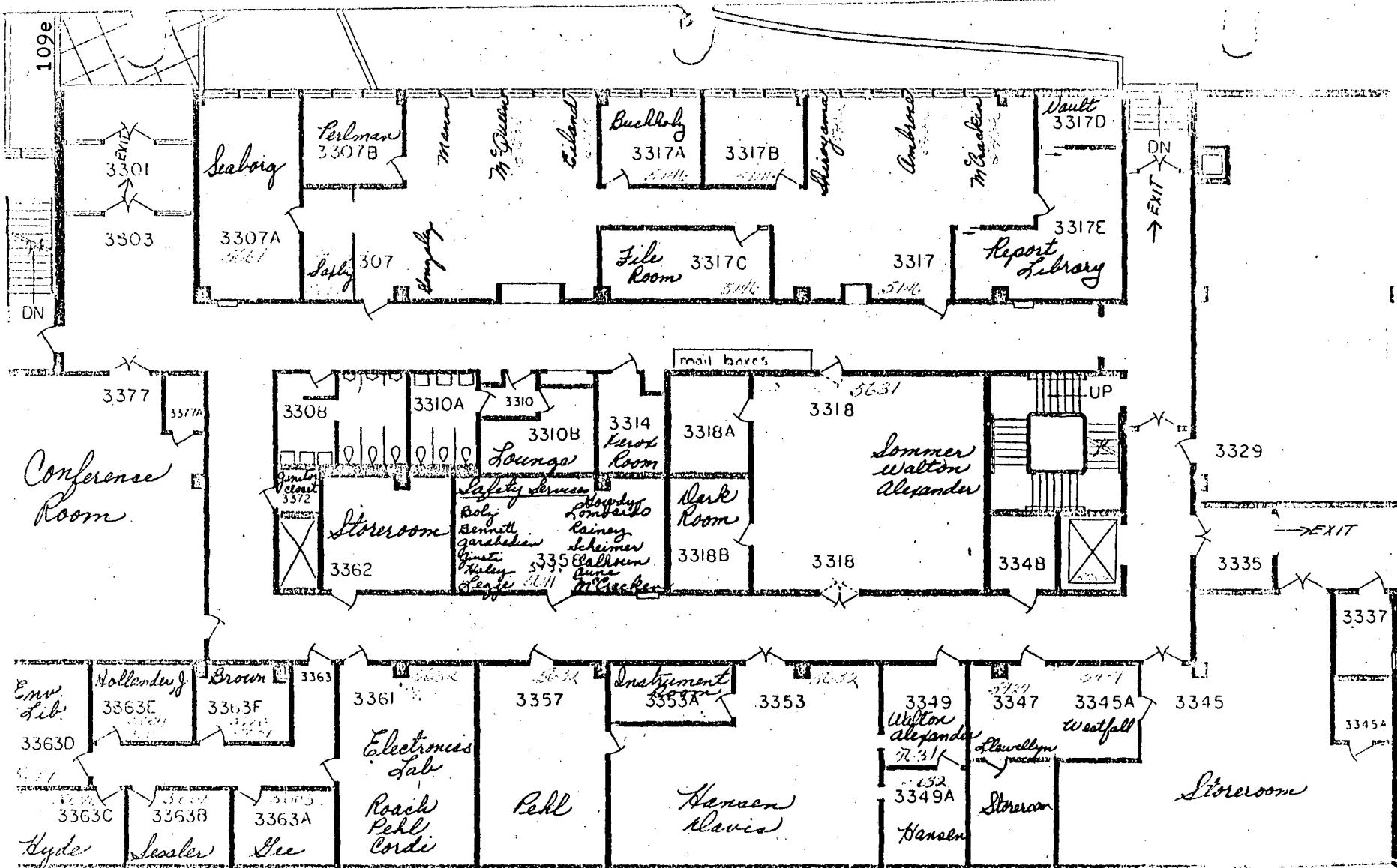
FIRST FLOOR



175'-0" 13LDG 70A

April 27, 1972

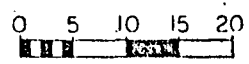




175'-0"

BLDG 70A

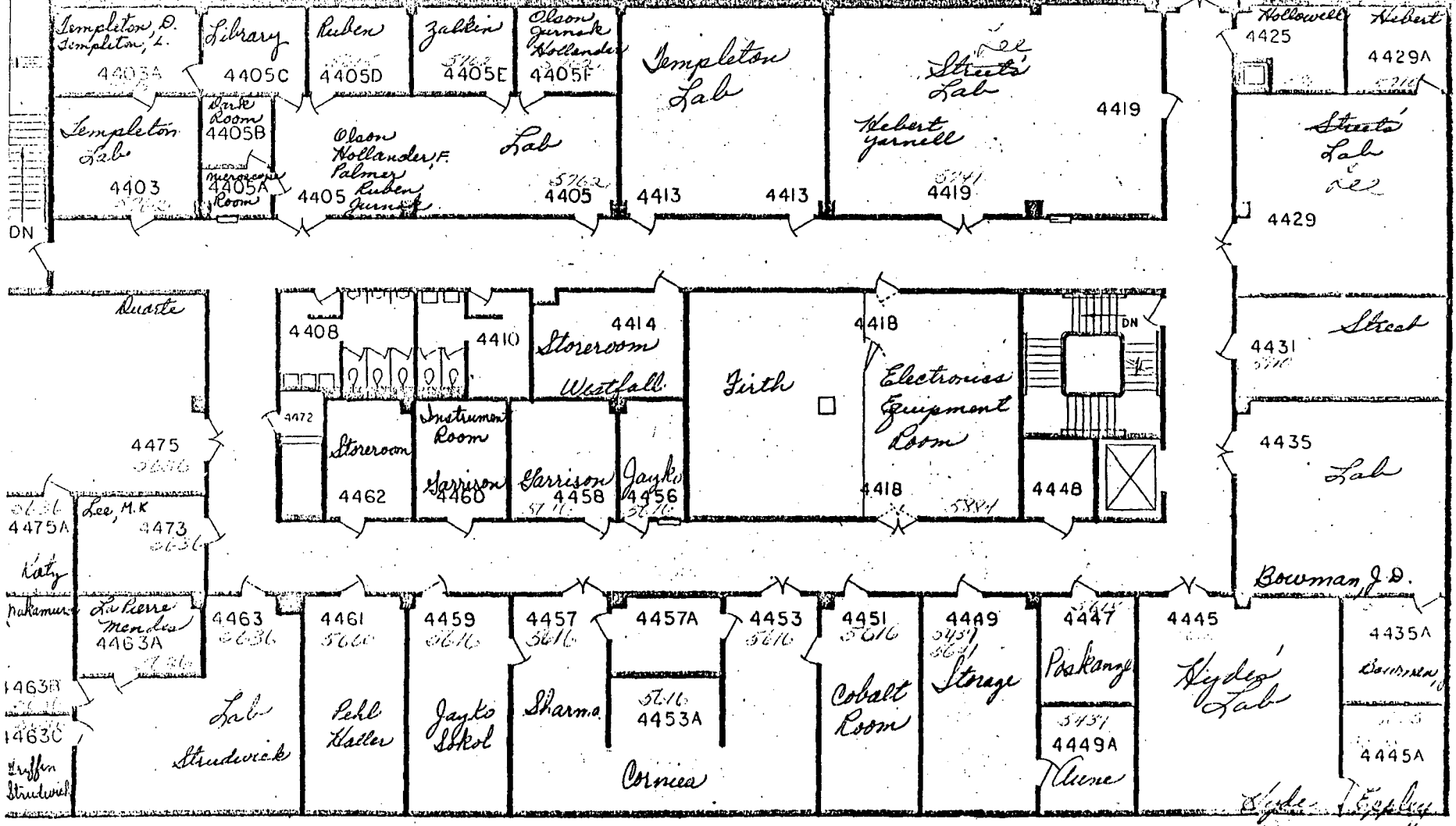
April 27, 1972



THIRD FLOOR

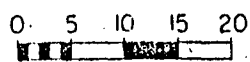


109f



175'-0" 13LDG 70A

April 27, 1972



FOURTH FLOOR

I then went to the Sheraton Park Hotel to participate in a symposium on "Exotic Nuclei," chaired by Fay Ajzenberg-Selove. I spoke on "The Superheavy Elements," illustrated with slides. I announced that the SuperHILAC had been turned on successfully last week and described the closed shell concept, methods of producing the nuclei, SASSY, and predicted chemical properties.

I next took a taxi to 1717 H Street, where I met with Bob Hollingsworth, along with John Ryan, to receive a briefing on the status of affairs at the AEC. The briefing was complete, covering the many organizational changes, the breeder demonstration program, the fiscal 1973 budget, the personnel changes at Argonne National Laboratory, the status of the BEVALAC and other aspects of LBL, etc. I mentioned the status of publication of my book Nuclear Milestones. The session lasted from 4:00-7:00 p.m.

I had dinner at Holloway House Cafeteria (14th Street and New York Avenue) and took a taxi home. Pete and Jane were still asleep, having worked the graveyard shift last night. I called Bob Markert, who is in Washington Hospital Center recovering from a minor foot operation; in the course of our conversation, we discussed swimming pools since we are giving some thought to installing one--he will send me some information.

Friday, April 28, 1972 - Washington

I phoned Ed Cornish, President of the World Future Society, at their headquarters in Bethesda, to give him my responses to the questions he mailed early this month to the Board of Directors.

I took a taxi to the AAAS headquarters to attend a meeting of a special committee for planning the Second Arden House Conference, starting at 10:30 a.m. Present were Mina Rees, Leonard Rieser, Ward Goodenough, Dick Bolt, Bill Bevan, Catherine Borrás, and Lewis Branscomb. The meeting began with a session, chaired by Mina Rees, to discuss the AAAS Youth Council and its membership. We decided to invite George Lipkin, Sydney Drayson, John Burmeister, Joel Primack, Walter Stewart, Edie Goldenberg, Jonathan Cole, Virginia Walbot, Harold Raveche, George Ryerson, and Frank Fradin and Ernest Gifford after checking their qualifications, with Burmeister as chairman.

We went into the main topic at about noon--namely the planning for the Second Arden House Conference. We decided we would have papers prepared (for possible publication in Science) covering the following issues, which would also be the subject of sessions at the December meeting: (1) further integration of the various fields of science, (2) integration of technology into AAAS, (3) commitment to an organization of scientists for science and one concerned with broader problems of the relation of science to society, (4) role of AAAS in science education, (5) role of AAAS in public understanding of science, (6) publications policy, and (7) role of the scientist. Rieser and others will prepare a paper on this for discussion at the June meeting of the Board.

After the meeting, I dropped in on Phil Abelson; Barbara Culliton was also in his office. I suggested an editorial in Science emphasize-

ing the importance of developing "other" sources of energy such as solar, fusion, geothermal, gasification of coal, etc., with the research to be centered in the AEC. Abelson agreed and suggested that I might write it as a guest editorial, which I agreed to do; I'll send it to him for his perusal and approval.

I then dropped in on Walter Berl, where Leonard Rieser joined us. We talked about the joint meeting to be held in Mexico City June 24-30, 1973. The Mexican National Council on Science and Technology (CONACYT) will co-sponsor the meeting with AAAS. Eugenio Mendez-Docurro, Minister of Transportation, is head of CONACYT, with Ismael Herrera next in line of command, then Henry Martin del Campo, who is the young man in direct charge. We hope to have the involvement of the Mexican physicist Marcos Moshinsky as well. Our AAAS man in Mexico City to work on this is Richard Bolin (formerly with Arthur D. Little). Attempts are being made to arrange an appointment with President Luis Echeverria. I should also try to see the Chairman of the Mexican AEC, Dr. Fernando Alba Andrade.

I rode home by taxi and joined Pete and Jane for dinner. Pete received a rejection from Georgetown University Law Center today. I called Sheila to be brought up-to-date on my correspondence, appointments, etc. I also spoke to our new secretary, Sylvia Kihara, and welcomed her; she started work this week. Dan Tyler Moore called to invite me to speak (on fusion) to the International Platform Association at their annual meeting in Washington this summer; I regretted but said I would do so at next summer's meeting.

Saturday, April 29 1972 - Washington - Old Rag

I rode with Stan and Renee Schneider, their daughter Wendy, her friend Patience Priest, and the Schneider's friend Nina Hammer (whose former husband is the New York Times' writer Dick Hammer) to Nethers for a hike up "Old Rag." We were joined by Phil and Eleanor Lautenschlager, Dave and Ann Neibert, and the Schneider's friend Joseph Szapocznik (born in Poland, raised in Cuba, serving a one-year internship in Clinical Psychology at St. Elizabeth's Hospital). We took our regular annual hike up the steeper, rock-climbing side, had a picnic lunch on top, then went down the other side and back to our starting point via Weakley Hollow Road. We stopped for a bite to eat at our regular Frostie Freeze in Warrentown on the way home.

Pete and Jane went to a late show with their friends Kent Lin and Doreen Sterling (a chemistry major just finishing at George Washington University). I phoned Helen to get on up-date on things at home.

Sunday, April 30, 1972 - Washington - Argonne

I spent a good part of the day reading the mail and various papers that Sheila sent me, including Betsy McFadden's latest sections of Travels in the New World. I phoned Betsy to discuss this, especially the section on my South American trip of July 1967.

I took some pictures of Jane and Pete in front of the Harrison Street house. I then said goodbye, caught a taxi to National Airport, and boarded American Airlines Flight No. 553, which left at 6:15

p.m. and arrived at O'Hare Airport in Chicago at 7:10 p.m. Here I met Bob Silva (who had just arrived from Oak Ridge) and we took a limousine to Stouffer's Oakbrook Inn, where we were picked up by Phil Horwitz who drove us to the Lodging Facility at Argonne National Laboratory. I checked into Room 2 in Building 600 (my usual room in the old Freund Estate Building) and Bob checked into Room 3.



Peter and Jane Seaborg at  
3825 Harrison St., Washington,  
April 30, 1972.

Monday, May 1, 1972 - Argonne - Oak Ridge

Bob and I walked to the cafeteria where we had breakfast. We then went to the Chemistry Building where we held a discussion in the conference room of the hot laboratory wing (corridor M). Present were Paul Fields, Phil Horwitz, Carol Bloomquist, John Unik, Arnold Friedman, and Sherman Fried. We explored the general problem of preparing metallic uranium and thorium targets for bombardment with heavy ions in the SuperHILAC, which will be able to dissipate the large heat energy that will be generated. They are enlisting the help of Oak Ridge National Laboratory in preparing these targets. We also discussed the electronic structures and predicted chemical properties of elements 110-120.

During a little intermission, I dropped by to see Joe Katz in his office; we discussed progress on the history of Met Lab Section C-1

and on the revision of Chemistry of the Actinide Elements. Unfortunately, due to a family problem, he will be unable to meet me at Los Alamos during my visit there at the end of the month.

We resumed our discussion in the conference room with Larry Stein added to the group, but without Unik and Friedman. We discussed Stein's work on the chemistry of radon; he finds a stable radon difluoride and expects a stable difluoride of element 118. He has designed an apparatus to use in looking for volatile superheavy elements produced in SuperHILAC bombardments; it consists of a dissolver, a cold trap to catch the gases, and a counting system to detect the gases.

We had lunch in the cafeteria--Horwitz, Bloomquist, Stein, Fields, Unik, Fried, Silva, and I. After lunch, Horwitz drove Silva and me to the Lodging Facility. We checked out and then took a little walk around the Argonne Lab grounds.

We then went back to the conference room, were joined by Carol Bloomquist, and discussed the Horwitz-Bloomquist experiments in liquid extraction chromatography and the application of this technique to the chemical identification of superheavy elements produced in the SuperHILAC. They have a very neat, well equipped and well organized laboratory. Horwitz plans to spend a couple of weeks working with us at LBL this summer.

We dropped by to say hello to George Marm, formerly with Don Peppard but now working with Horwitz. After I finished my discussions with Horwitz and Bloomquist, I dropped by to talk with Darrell Osborne and Leonard Katzin, while Silva continued his discussion with Horwitz.

At the end of the afternoon, Silva and I were driven to O'Hare Airport by an Argonne Lab driver. Here we boarded Delta Airlines Flight No. 433, which left at 6:00 p.m. and arrived in Knoxville at 8:00 p.m. We were met by Lew and Donna Keller who drove us to Oak Ridge. I checked into the Holiday Inn, Room 433, and spent the night there.

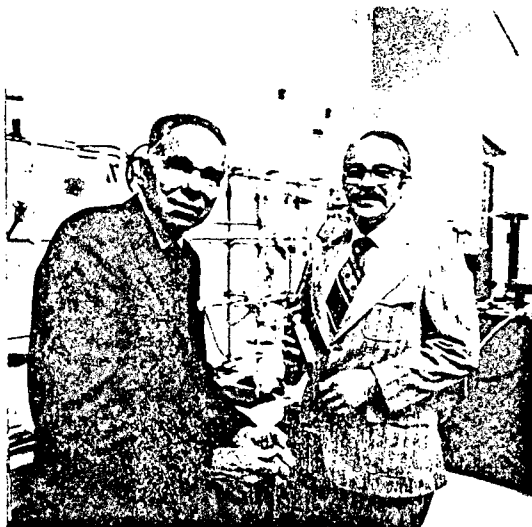
Tuesday, May 2, 1972 - Oak Ridge - New Orleans

I had breakfast in the Holiday Inn restaurant with Bob Silva, joined later by Lew Keller. We then drove out to Oak Ridge National Laboratory and went to the Director's Office where we met with Alvin Weinberg and Floyd Culler. After this we went to Lew Keller's office in the Transuranium Laboratory where Keller, Don Ferguson, Russ Baybarz, Silva, and I had a discussion on the predicted chemical properties of the superheavy elements that might be produced in the SuperHILAC. I also discussed with Baybarz plans for his coming to LBL to work on this problem; he will do some preliminary work at ORNL before coming.

During the morning, some pictures were taken of me with Silva and with Keller and Ferguson, under the supervision of Barbara Lyon (Assistant Director of Public Information) for use in the Laboratory publication. Joe Lewin also dropped by so we could discuss some changes in the report on our August trip to the Soviet Union upon

which we have been working. I talked to Keller and Francois Kertesz about continuing the translation of Russian articles which they will do.

Keller, Ferguson and I then took a little walk before lunch, which we had in the cafeteria. At our table were Ellison Taylor, Culler, Ferguson, Baybarz, Silva, and Keller.



GTS, Bob Silva: Oak Ridge National Laboratory, Tenn.  
May 2, 1972.



Lew Keller, GTS, Don Ferguson:  
Oak Ridge National Laboratory,  
May 2, 1972.

After lunch I called Sheila at my LBL office to be brought up-to-date on my correspondence, etc. She told me that she had talked to Richard Spees, chairman of the National Educational Film Festival, and learned that no film this year merits the Seaborg award for the best reporting on Research and Development. Thus a Seaborg Award will not be given this year and Dan Wilkes will only be doing the Lawrence Award presentation. They will announce, however, that the name of this category will still be open for the future.

Keller drove me to the Knoxville Airport; Silva and Len Nugent came along, which gave me the opportunity to discuss his and Kenneth Vander Sluis's work on the electronic structure of element 103.

I caught Delta Airlines Flight No. 731 to Atlanta, which left at 2:50 p.m. and arrived at 3:30 p.m., and then Delta Flight No. 351 to New Orleans, which left at 4:15 p.m. and arrived at 5:15 p.m. Ralph Livingston and David Sundberg (Director of Public Information of ORNL) were also aboard the flight en route to New Orleans to serve as judges for the AEC Awards at the International Science and Engineering Fair. I was met by Charlotte Felt and Louis Jameson (an employee of Hibernia Bank). Jameson drove us to the Monteleone Hotel, where I checked into Room 610, and then to the International Trade Mart, where I attended the dinner of the Science Service Council at the Plimssoll Club (on the 30th floor). Before dinner, I was interviewed by Bruce Nolan of the

New Orleans Times-Picayune, mostly on the safety aspects of nuclear power and the attacks by the environmentalists.

At dinner I sat at a table with Ted Sherburne, Dorothy Schriver, Mr. and Mrs. Harold D. Brennand (he is General Chairman of the 23th International Science and Engineering Fair), Mr. and Mrs. Stanton, M. Frazar (he is with the Hibernia Bank and Vice Chairman of the Fair), and Mrs. Albert W. Habak (Assistant Chairman of the Fair). After the dinner, during which we had an excellent view of New Orleans, we walked across the street to the Rivergate, the site of the Fair and the Opening Ceremony, where we met with the stage party and others in the Directors' Room. Among the additional people I met were Roger W. Richardson (Dean of Engineering of Louisiana State University), Dr. C. Harold Fisher (incidentally a member of the American Chemical Society Board of Directors), Mrs. William Hindson (whom I met at the Los Angeles Fair in 1956 and the Baltimore Fair in 1970), Dan Hessemer, Max C. McLean, Nancy Miller, Elmira Wendland, Cliff (Ted) Beck (El Cerrito High School and associated with the Bay Area Science Fair), and many others.

We then entered the huge auditorium which was packed with people sitting on chairs that had been put in place. Harold Brennand presided and began by introducing the large group on the stage. He then called on Dean Richardson, who gave greetings on behalf of Governor John J. McKeithen, and Mr. Carrier, who gave greetings on behalf of New Orleans Mayor Moon Landrieu. Mr. Carrier presented Sherburne and me with certificates of honorary citizenship of New Orleans and keys to the city. Brennand then introduced me with a very complete biographical sketch and I gave my talk, "Science and the Quality of Life." It was received with a standing ovation and I autographed programs for many of the high school students and teachers afterward. I had my picture taken with many students and teachers, including the group from Puerto Rico.

I then visited the exhibits in a neighboring large room with Ted and Dorothy. I met the Swedish participant Ingrid Nordqvist (from Malmo) and her accompanying teacher Sven Anders Rjorse (from a junior college near Stockholm) and had my picture taken with them by Ingrid's exhibit "Lumnological Studies of Two Ponds." Following this, I walked back to the Monteleone Hotel with Dorothy Schriver, which gave us the opportunity to discuss Science Service business.

Wednesday, May 3, 1972 - New Orleans - Berkeley

Louis Jameson drove me to New Orleans International Airport where I caught Delta Flight No. 883 to Dallas, leaving at 7:15 a.m. and arriving at 8:30 a.m., and continued to San Francisco on Delta Flight No. 11, leaving at 9:30 a.m. and arriving at about 10:30 a.m. Helen met me at the airport and drove me to my office.

I went over my mail with Sheila, had lunch in my office, and met Sylvia Kihara, our new secretary. I then walked down to the campus to teach my Chemistry 1C section in Room E Latimer Hall. I then attended the press conference in the IMRD Building where opening of the new Center for Design of Alloys was announced; Professor Victor Zackay conducted the news conference.

At 3:30 p.m., I met with Earl Hyde, Al Ghiorso, Bob Main, Jack Hollander, and Maynard Michel. They told me that they had found a solution to the Norman Milleron problem which they wanted to try out on me. We will give him until July 30 to complete his application to the NSF for the support of the development of his "breath analyzer." Then after that, he will be assigned to Bob Main to work on ion source development for the SuperHILAC. The consultant status of William Greiman will be terminated as of July 1. I will meet with Milleron along with Earl and Bob to acquaint him with our decision.

Edward Wenk called me at 4:40 p.m. from the University of Washington in Seattle in his capacity as Chairman of the National Academy of Engineering's Committee on Public Engineering Policy. NAE has asked them to recruit a steering committee to analyze the transfer of information from the laboratory into society. The committee is to include people from outside of engineering, and for this he wants a natural scientist who is also affiliated with the National Academy of Sciences, i.e., Melvin Calvin. I suggested he call Calvin directly. Wenk is writing me about a new program on the social management of technology in which he wants me to participate; I indicated that I probably would not be able to take on this additional commitment, but would read over his letter.

I took a hike to the water tank with Eric, Chris Phillips and Suki.

Thursday, May 4, 1972 - Berkeley

I wrote to Stanley McCaffrey, President of the University of the Pacific, my regrets that I will not be able to attend his inauguration. I also wrote to M. V. Keldysh, President of the Academy of Sciences of the U.S.S.R., about an exchange of scientific work between our countries (copy attached).

Robert Thorne, new manager of the San Francisco Operations Office, with his assistant Jeff Zafiris, arrived in my office at 9:15 a.m. to begin his first visit to LBL since his assumption of the manager's post. Earl Hyde and I took them to the HILAC, where Al Ghiorso, Bob Main and others oriented them. In the course of the conversation, we invited both of them to attend the Friday morning SuperHILAC Research Group meetings, and we described some of our financial problems. Thorne indicated that he might be able to help on these in a small way, and we made a tentative date that Ghiorso and Main would come down to see him for detailed discussions in a couple of weeks.

At 11:00 a.m., I met in my office with Jack Bates, newscaster, and Walter Nash, cameraman, for a televised interview for "Newswatch," KRON-TV (Channel 4), following up UPI's distribution of my New Orleans talk. We sat at the table in my office for the filming. Bates asked me to amplify on my statement that we should undertake an inventory of the world's resources; I said I thought we had the scientific tools and international organizations capable of conducting such a survey. He inquired about the "energy crisis," which I immediately redefined as a problem if we are to meet our growing demands.



May 4, 1972

Academician M. V. Keldysh, President  
Academy of Sciences of the U.S.S.R.  
Leninskiy Prospekt 14  
Moscow, U.S.S.R.

Dear President Keldysh:

I am writing to you on the behalf of Science Service, a nonprofit organization of which I am President of the Board of Trustees, to ask for help in developing an exchange of scientific work between young people of both our countries.

Let me give you some background. One of the activities which Science Service administers is the International Science and Engineering Fair. This takes place in May of each year in a different city in the United States. The participants are high school students (9th through 12th grades) who have done independent research projects in some area of science, engineering, or mathematics. They present the results of their research through exhibits describing their research which are on display for approximately a week, and open to other students and members of the general public.

The International Science and Engineering Fair is also a competition, and the students are judged by a large number of judges who give a variety of awards. In addition, the week includes many tours to places of scientific and cultural interest in the city where the Fair is held.

I would like to explore the possibility of an exchange between the United States and the Soviet Union, possibly starting out with one or two exhibits on research

M. V. Keldysh

- 2 -

May 4, 1972

done by students in the USSR, and sent here for display at our Fair. If desired, we might also consider sending one or two exhibits selected from our International Science and Engineering Fair to some appropriate location in the Soviet Union for display.

Ultimately, I hope that it would be possible to have an actual exchange of students as well as displays, with one or two Russian students coming to our International Science and Engineering Fair, and one or two Americans visiting the Soviet Union. However, I feel that it might be easier to start with a simple exchange of displays in the beginning.

I am enclosing some material on the International Science and Engineering Fair which will give you some idea of what it is like. I have been to a number of these fairs in the last few years, and I am always amazed and delighted at the enthusiasm of the young people there and the sophistication of their exhibits. And I am sure that it would add a great deal to the overall Fair if we could have some sort of representation from the Soviet Union.

I am going to be in the Soviet Union on September 4-8, 1972, to attend the Symposium on the Chemistry of the Transuranium Elements which Professor Spitsyn is organizing at the Institute of Physical Chemistry in Moscow. Perhaps we will have a chance to discuss this and other matters at that time.

With warm regards,

Cordially yours,

Glenn T. Seaborg

GTS/ssk  
Enclosures

cc: Mr. Valerian Nesterov  
Counselor  
Embassy of U.S.S.R.  
1706 - 18th Street, N.W.  
Washington, D.C. 20009

bcc: E. G. Sherburne

After this session, I joined Thorne and Zafiridis in Jack Hollander's office where they had been discussing the new plans for the Lab's program on energy and environment. We gave them a good background briefing on the problems and status of this program. They indicated enthusiasm and willingness to help in every way they can.

Chancellor Charles Young called me from UCLA at 11:30 a.m. He had heard a rumor that Stafford Warren was being given the Fermi Award; they want to do something if it is true, but Warren has not been told and Young wants to avoid any embarrassment. I suggested that he call Bob Hollingsworth (telling him that I advised his calling directly), which he said he would do. (Charles called me back later to report on his talk with Hollingsworth. Stafford Warren and Shields Warren are sharing the Fermi Award this year, but each is getting \$25,000.)

I had lunch in the cafeteria with Thorne and Zafiridis, along with Hyde, to continue our discussions. We met with Sessler briefly after lunch to give him an opportunity to give his views on the Lab's impending program on energy and environment.

Kirk Smith, a graduate student in environmental health sciences, came to see me in my LBL office at 4:30 p.m. He is preparing his M.A. thesis on the fast breeder reactor and general public health problems created by such large-scale use of plutonium.

Eric, Chris, Suki, and I took a hike to the water tank. Lynne and Bill had dinner and spent the evening with us.

Friday, May 5, 1972 - Berkeley - Walnut Creek

Dave Nowinson of Network News, ABC Radio in Los Angeles, called me at 9:30 a.m., for some comments in connection with the call in my speech at New Orleans for some kind of inventory of the planet's natural resources. His questions included: Who would do the inventory, and what would it accomplish? How does one maximize use and minimize abuse of resources? Can economic advance at the cost of environmental degradation be stopped? Is the energy crisis real? Are fossil fuels on the way out? Will the internal combustion engine continue in our automobiles after 1975? I responded on the basis of the material in my talk in New Orleans, "Science and the Quality of Life."

From 10:00 a.m. to noon, I attended the meeting of the Superheavy Elements Research Group. Ken Mirk reported the discovery of a leak in the SuperHILAC last night; they opened up the machine and found small holes in drift tubes nos. 58, 32 and 44; it is not yet clear how serious this is. Klaus Halbach expressed some thoughts on the use of gridded ionization chambers for measuring energy loss of superheavy recoils. Dick Marrus described his proposed experiments on one-electron and two-electron atoms of high atomic number to observe relativistic and quantum electro-dynamic effects. I gave a report on my trip East, including especially my talk with Hollingsworth and my visits to Argonne and Oak Ridge. Nitschke described the pressure stabilizing system for the analyzing magnet of SASSY. Ghiorso described some problems of developing the thin windows for SASSY.

Friday, May 5, 1972 (con't)

The Program Committee of the Nuclear Chemistry Division held a bag-lunch meeting in my office from 12:00-1:05 p.m. All except Dave Shirley attended. I opened the session by presenting the 25-year service pin of the University of California to Stanley Thompson. We congratulated Jack Hollander on his appointment as Assistant Director for the Energy and Environment Program.

Al Ghiorso described the setback at the SuperHILAC--that is, the holes in the drift tubes. Earl Hyde told the committee that he is preparing for the annual salary reviews and needs the group leaders' recommendations on raises for their people by the end of next week. I described some aspects of my trip last week. I also reported on the visit of Robert Thorne and Jeff Zafiris, mentioning that Hollingsworth had reinforced the changing role of the area managers. We are to keep Thorne's office fully informed, particularly on policy items. Earl reviewed the list of consultants whose terms of appointment expire on July 1. Joe Cerny outlined progress on the summer programs. Bernie Harvey announced that the 88" Cyclotron had made a beam of iron-56 to 220 Mev. Iz Perlman said he heard from Bob West that they thought the strike would go on for another few weeks.

John Ryan, AEC/Washington, returned my call at 12:50 p.m., during the Program Committee meeting. I told him that Jerzy Neyman was coming in to see me about his invitation to meet with several Commissioners in Washington on Monday. He told me that Neyman would probably be asked to serve on the ACRS; I indicated that I would only suggest that possibly this is what they wanted. Ryan also said that, as a result of my discussions with Bob Hollingsworth and himself last Thursday afternoon, he has talked to Commissioner Ramey about the Milleron problem. Ramey is much more relaxed about this now because Milleron has been kept on for the length of time that was agreed to. Ramey will discuss with Schlesinger whether we need to feel obligated to continue Milleron at the Laboratory. Ryan also told me that they have given permission to W. H. Freeman to publish Nuclear Milestones, although the copyright will only apply to what they add to the original volumes.

Jerzy Neyman came to seek my advice on the meeting he is going to have with some members of the AEC next Monday. He had biographical material on the Commissioners and press releases on the ACRS and the regulatory reorganization that Herb Kinney had sent him from the AEC. I told him that I suspected that the Commissioners wanted to get acquainted with him for the purpose of determining whether they might want to invite him to become a member of some advisory committee.

He then went on to discuss the Copernican volume. He said Alan Portis, Director of the Lawrence Hall of Science, had suggested that there might be a symposium for the public in the Hall some time this summer. Participants might be Rainer K. Sachs of the Berkeley Department of Physics, Michael Kasha, Victor Weisskopf, and me. I said that I would not object to participating, but certainly wasn't anxious to add to my schedule. We would apparently speak on the subjects of our Copernican volume papers. He also referred to his memorandum of May 1 which was concerned with the possible NAS Copernican symposium for

next year, either at the annual meeting in April or the fall meeting in October. There might be a half-day symposium at the NAS and at the same time a 2-3 day symposium at the Smithsonian Institution in a program that would include a large dinner (estimated to cost \$15,000).

At 4:30 p.m., Ghiorso called to say they have found that the holes in the drift tubes were probably produced by errant electron beams and the difficulty can be cured by the proper installation of magnets.

Eric, Suki and I took a hike to the water tank.

Helen and I attended the annual dinner of the Contra Costa Park Council at the Saranap Inn in Walnut Creek. About 100 people were present. We met, among others, Mr. and Mrs. William Dickinson (he is president of the Council, was re-elected for another term, works at Lawrence Livermore Laboratory), Mr. and Mrs. Manfred Lindner (elected Vice President of the Council, also at Livermore), Mr. and Mrs. Richard Trudeau (he is General Manager of the East Bay Regional Park District), Dr. and Mrs. Al Burton (he is the founder of the Council), Mr. and Mrs. Jack Marshall (candidate for State assembly), Larry Azevedo (city councilman), Mrs. Peg Kovar, Mr. and Mrs. Fred Blumberg (President of the East Bay Regional Park District Board of Directors), James Moriarty (member, Contra Costa Board of Supervisors, representing the district in which I live), Ed Luischeid (member, Board of Supervisors), Minor Tripp (candidate for State Senate, running against incumbent John Nejedly, representing my district), Craig Randall (President of the Water District), Mr. and Mrs. Hulet Hornbeck (in charge of land acquisition for the East Bay Regional Park District), Bill Home, Alvin Baum (local Project Director for Overview, Stewart Udall's firm), Jane Putnam (political editor for The Lafayette Sun), Larry Oren, Tom Castagnola (a young man very active in conservation affairs), Mr. and Mrs. [Emily] Boettler (she was a pre-war secretary in the U.C. Physics Department, a friend of Helen's).

Helen and I sat at the head table with the Dickinsons, Trudeaus, Lindners, and Burtons. Dickinson presided over the business meeting of the Council, election of officers, etc., and others spoke briefly on Council affairs. Lindner introduced me with an excellent speech, and I spoke on "Understanding the Environment," illustrated with slides. I described some of the environmental research at LBL, our 1971 trip to the Soviet Union, Perlman's archeological research, and the search for the superheavy elements. My talk, followed by questions, was very well received.

Saturday, May 6, 1972 - Lafayette

I worked on my book Nuclear Milestones which will be published by W. H. Freeman Co., probably as early as this fall.

Lynne and Bill with their friend Ila Nackley, with her son Frederick (Bubba), dropped by in the afternoon and stayed to dinner. They took a hike with Eric, Suki, Bessie, and me in Briones Regional Park. We hiked up the hill from Homestead Valley and back via Crescent Ridge.

Sunday, May 7, 1972 - Lafayette

I worked on my Chem 1C lectures. Eric, Suki and I took a hike in the hills near Lafayette Reservoir.

Monday, May 8, 1972 - Berkeley

I received a call at 9:00 a.m. from David Purdy, President of CORATOMIC, a new company he has founded which is going into the atomic pacemaker and artificial heart business, for which  $\text{Pu}^{238}$  is still the only and best power source. He has been working on this with Dr. George McGovern, Director of Surgery at the Allegheny Hospital. He asked me to serve on the Board of Directors of CORATOMIC, but I declined because of my overcommitted schedule. I suggested he might contact Walter Zinn. (Purdy recalled that he had talked with me when he was at the AEC; he was working for NUMAC and gave a presentation on the artificial heart; apparently I referred the program to Gene Fowler.)

I held my office hour in Latimer Hall, then went to lunch with the Chemistry Department faculty in the Howard Room of the Faculty Club. After, I taught my Chem 1C section in Room C.

At 2:15 p.m., Vice Chancellor Mark Christensen met me in my Latimer Hall office. He wanted to discuss with me the matter of the new Director of the Lawrence Hall of Science. A problem has arisen because of conflicting recommendations of the faculty committee on the one hand, and Harvey White and Regent John Lawrence on the other. The faculty committee recommends Mac Laetsch as its first choice, Robert Karplus second, and George Pimentel third, with Pimentel rated in this position because they feel he shouldn't be moved from his present important work and probably wouldn't want to be. In a letter, Harvey White recommends Wayne Fry as first choice and David Judd as second. The fact that Judd is not a faculty member probably rules him out. I said that I felt Karplus might not be sufficiently sensitive to the feelings of White and Lawrence. I thought Pimentel would be best but agreed that he probably wouldn't accept it. I gave Christensen a short history of the origin of the idea for the Hall and how it was created and indicated that without White it would never have been created and survived--thus, his feelings should be kept in mind. I said I agreed with White that the Hall should have a public display aspect and I would want the new Director to have this view and be somewhat sympathetic with White's views. Christensen indicated that he would explore these thoughts with Mac Laetsch and talk further with White and Lawrence. He obviously wants to avoid a fight with the Regents over this matter.

I attended the Nuclear Chemistry seminar in the conference room of Building 70A, where Swiatecki spoke on "Macroscopic Approach to Heavy Ion Physics."

During my regular evening hike to the water tank with Suki, I carried my portable radio in order to listen to President Nixon's speech on Vietnam. This was an extremely significant speech, the import and impact of which has yet to be determined. He made the amazing announcement that he has ordered the mining of the entrances

to all North Vietnam ports, the interdiction of the delivery of supplies on all internal and claimed territorial waters of North Vietnam, the cutting of rail and other communications lines, and that the air and naval strikes against military targets will continue. He said that ships presently in North Vietnam will have three daylight periods in which to leave. He laid down his peace terms: the return by the North Vietnamese of all U.S. prisoners of war and an internationally supervised cease-fire throughout Indochina. When these terms are met, the United States will halt all forceful acts and withdraw all American forces within four months.

The reaction of local democratic Congressmen interviewed by news media following the talk was uniformly adverse, and the reaction of news commentators was one of apprehension and concern. There were rather serious riots on Telegraph Avenue in Berkeley with a fair degree of destruction of property.

Tuesday, May 9, 1972 - Berkeley

The morning papers were dominated by the story of President Nixon's talk last night. In Congress, the split is pretty much along party lines, with the Democrats strongly opposed and the Republicans generally in favor of the announced program.

Robert Epple called me from Washington at 10:15 a.m. about the dates for a meeting of the Chemistry Division directors of the various AEC laboratories in Washington, preferably on June 7-8. I indicated that I could not attend but that Earl Hyde will represent the Nuclear Chemistry Division from LBL. Bob said he would contact Earl directly.

I called Kasimir Fajans in Ann Arbor, Michigan at 10:40 a.m. in connection with my article on actinium for the Italian encyclopedia and asked his opinion of Harold Kirby's article giving credit to F. Giesel for the discovery. He thought that Kirby overstated the case; nonetheless, Fajans would give Giesel more credit than he has normally received. He indicated that he wrote about this in his book in 1919 and had met Giesel personally. He inquired if anyone was working on the so-called precipitation law, which he had formulated in his lecture about Hahn; I indicated that no one was working on it out here. At his request, I said I would send him a copy of my letter to him of about five years ago. He will be visiting in California sometime in June and I invited him to visit us at Berkeley.

At 11:00 a.m., I went down to the Physical Sciences Lecture Hall to hear Professor Markowitz's Chem 1C lecture. About five minutes before the lecture was scheduled to begin, two girls came in and attempted to address the large class about President Nixon's speech. Their approach was very doctrinaire and they didn't succeed in getting any appreciable portion of the class to agree with them. In fact, one girl inquired as to whether she might ask a question and, when told to proceed, asked what the breaking of windows on Telegraph Avenue had to do with bringing the Vietnam War to an end--essentially all of the class broke into applause.

I then proceeded down to the Alumni House to meet Lynne with whom I had a lunch date. We dropped by Sproul Plaza where a large crowd

was assembled to hear a number of speakers. The crowd seemed quite receptive, but the program mixed the Vietnam War with the current strike on the campus, and it is doubtful as to how effective this will be. Lynne and I then went to the Sunshine Inn on Durant Avenue and had a sandwich. We discussed her and Bill's plans for their work at Purdue University this fall.

From 2:00-2:30 p.m., I met with Norman Milleron in my office in the presence of Earl Hyde, Jack Hollander, Bob Main, and Maynard Michel. I told him that we had been discussing and had come to a conclusion about his future role in the Laboratory. I indicated that he should finish before July 1, under the guidance of Michel and Hollander, the proposal to NSF for financial support of his "breath analyzer" project. Then on July 1, he would work under the direction of Bob Main, in a manner in which I would be kept informed of progress, on the ion source development at the SuperHILAC. There is no commitment as to how long we will be able to support him in this role or as to what we will do should we get a negative reply on the proposal to NSF. I indicated that Greiman would cease his role as a consultant to his project as of July 1, 1972 and would no longer be supported by the Nuclear Chemistry Division at that time, but we had no objection to his finding support for him in other divisions of the Lab or through the Livermore Lab. I made it clear that this program for his future is made necessary by the extreme budgetary stringencies of the Nuclear Chemistry Division. Milleron seemed to understand my description of our decision.

The disturbances in Berkeley mounted this afternoon in "reaction" to President Nixon's action. The fence around the so-called People's Park was virtually demolished and pavement torn up.

Suki, Eric and I took a hike to the water tank.

Wednesday, May 10, 1972 - Berkeley

The preliminary reports on the radio are that President Nixon's visit to the Soviet Union, scheduled for later this month, will take place as planned, despite his Vietnam speech on Monday night. The student uprisings continued along Telegraph Avenue and at People's Park today.

I wrote to both Shields and Stafford Warren to express my delight that each will be a recipient of the AEC's Enrico Fermi Award.

I had lunch in my office, then taught my Chem 1C section; we gave them the second midterm today.

At 3:20 p.m., Bill Dauben from the UCB Chemistry Department called. He is on the Hitchcock Committee and wants my suggestion of people to be Hitchcock Lecturer. He said they are looking for someone of such caliber that he might receive the Nobel Prize while he was visiting Berkeley; I thought of Niels Bohr's son Aage. He thinks that anyone from chemistry would receive high priority.

Jack Hollander came in at 4:00 p.m. to report a conversation he had had with Antoni Oppenheim in Mechanical Engineering. He said that



George Maslach--Dean of the College of Engineering, who is about to become one of two Provosts of the Berkeley Campus (with jurisdiction over the Lab)--is violently opposed to College of Engineering cooperation, and now apparently campus cooperation, with LBL. Evidently this goes back some time to problems that such cooperation has created in splitting departments within the College of Engineering into rival factions. Oppenheim quoted Maslach as saying that he represents Chancellor Bowker now in espousing this view. I indicated to Jack that I would explore this with Bowker at the dinner I am attending at University House tomorrow evening.

Darleane Hoffman called at 4:15 p.m. to say that she and Jim Sattizahn (her present group leader) will visit LBL on Tuesday, May 23. I suggested she contact Bob Silva to confirm his being available here.

Eric, Chris Phillips, Suki and I took a hike to the water tank.

Thursday, May 11, 1972 - Berkeley

I attended Professor Markowitz's lecture and then had lunch with Frank Asaro outside the cafeteria to discuss an expanded "affirmative action" program that we have under consideration, using a small grant from the AEC Division of Education and Training. Hyde, Diamond and others were with us at the table.

Helen and I attended the second of the 59th Annual Faculty Research Lectures, given by Professor Horace A. Barker of Biochemistry in 155 Dwinelle Hall at 4:00 p.m. Barker was introduced by Chancellor Bowker and spoke on "The Vitamin B-12 Co-enzyme Story."

After the lecture, we walked with the McMillans and the Alvarezes to University House to attend the reception and dinner in honor of this year's Faculty Research Lecturers, Barker and Sherwood Washburn, who attended with their wives. Among those present in addition were Vice President and Mrs. McCorkle, Vice Chancellor Robert Kerley, Vice Chancellor and Mrs. John Raleigh, Professor and Mrs. Paul Stumpf from Davis, and a long line of former Lecturers, including the Segres, the Hildebrands, the Blackwells, the Raymond Birges, the Heinz Fraenkel-Conrats, and the Alfred Tarskis. Helen and I sat at a table with the Fraenkel-Conrats and the Tarskis, while the Bowkers sat at a table with the McCorkles, Washburns, and Barkers. There were no speeches.

I described to Chancellor Bowker the new program of research on Energy and Environment which is getting under way at LBL. I suggested he visit the Lab to become acquainted with this and other aspects of the work there, and he indicated that he would do so but would have to wait until summer. He volunteered the information that it had come to his attention that Engineering Dean Maslach held a negative view of the Lab. I replied that I had heard this also and that this might lead to complications in view of his new position as Provost. Bowker indicated that he didn't know what had led to Maslach's feeling this way, and we both seemed to agree that it should be possible to convince him of the value of a cooperative program between the Lab and the campus departments and the reasonableness of the Lab. I emphasized the value of such a cooperative program and said that the

combination of the Lab's facilities and resources and the expertise on the campus could lead to a program of unsurpassed quality and magnitude. I told him that I thought a good part of the Lab's budget would go into the Energy and Environment area as time goes on. Bowker indicated that relations might be helped if part of the overhead money from the AEC contract for operating the Lab might go to the Berkeley campus to aid in providing fellowships, travel money, and so forth; I agreed wholeheartedly and said that perhaps we should work together in trying to accomplish this. He said that President Hitch seemed to be in favor of such a move and that the next step would be to convince the Regents.

On the way from Dwinelle Hall to University House, Luis Alvarez talked to me about the unsatisfactory status of the administration of LBL. He said that the Townes Committee is definitely going to recommend the replacement of the Director. He also indicated that this should involve the replacement of other people in the administration, such as Dick Connell, Elmer Kelly, and Harold Fidler, who he felt had been doing a poor job. I asked him who he might suggest as the next Lab Director and he suggested Johnny Foster. I replied that I thought Johnny would be completely unacceptable to the campus because of his hawk-like war attitude and that this would greatly exacerbate relations between the Lab and the campus. I indicated that I believed we could find a very capable young member of the Laboratory staff and used Dave Shirley as an example. Alvarez said he knew Shirley and thought this might be worth considering. He agreed that the Lab should go into a research program in Energy and Environment and that it should no longer count on having a strong program in high energy physics. He thought that such areas as astrophysics and the biomedical and superheavy element aspects of the SuperHILAC were good directions in which to go, but he does not think very much of heavy ion physics.

Friday, May 12, 1972 - Berkeley - Houston

From 10:00 a.m. to noon, I attended the weekly meeting of the SuperHILAC Research Group in the conference room of Building 71. Ghiorso said he learned from Rasmussen, who had been in the Soviet Union, that G. N. Flerov's group had bombarded uranium with 900 Mev Xe ions ( $10^{10}$  ions per second internal beam) and found no Cf<sup>254</sup> ( $\sigma = 10^{-33}$  cm<sup>2</sup>) and no superheavy elements.

Cornelius Tobias talked on his proposed cellular research with heavy ions. Bob Main described his explanation of high electron discharges, "Multipactoring locks" or multiple impacts, that account for the holes in the drift tubes they discovered last week; this can probably be fixed by installing small permanent magnets to deflect the electrons. Richard Leres described some of his early consideration concerning the Hartree-Fock calculations of the electron structure of the heavy elements as they are affected by the neglect of configurational mixing. He is making parametric calculations. There may be 7p electrons in element 104, leading to a II state, e.g., corresponding to a  $7p^2 7s^2$  configuration.

I had lunch in the cafeteria with Ghiorso and Hulet. We explored the possibility of the Lawrence Livermore Laboratory contributing

\$100,000 to the HILAC budget (as it did last year) to finance Hulet's experiments; this seems to be a likely possibility.

Helen drove me to San Francisco Airport where I caught National Airlines Flight No. 40 to Houston, leaving at 3:30 p.m. and arriving at about 8:30 p.m. Mr. and Mrs. W. O. Milligan met me and drove me to the Rice Hotel, where I checked into Room 1419.

Saturday, May 13, 1972 - Houston

I had breakfast in my room, then walked to the Southwest Bank Building to attend the meeting of the Scientific Advisory Board of the Robert A. Welch Foundation. Present were W. O. Milligan, Henry Eyring, Carl Marvel, E. J. Corey, Bill Baker, and George Beadle. We first went over all the Progress Reports, then the new voluntary proposals. We discussed other business including forthcoming meetings, conferences, etc.

We had lunch at the Texas State Hotel, and then continued our meeting after lunch. We made decisions on renewal of research grants. We then discussed the procedure of choosing the biennial recipient of the Robert A. Welch Award in Chemistry (\$75,000). We decided that the first awardee shall be chosen from among the outstanding chemists working in the state of Texas and that the first award shall be made at the banquet to be held on November 21 at Conference XVI of the Welch Foundation. We chose Karl A. Folkers as the first recipient. We also decided to recommend to the Board of Trustees that arrangements be made for the writing of the history of the Foundation.

We all had dinner in the Bluebonnet Room of the Houston Club with Trustees Jack Binion, Roger Wolfe and Pete Wehner. Binion was not feeling too well due to his emphysema. We reported our recommendations on the grants, the Robert A. Welch Award, and the history of the Welch Foundation. I suggested Hunter Dupree as the author.

Sunday May 14, 1972 - Houston - Lafayette

I took a taxi to the Houston Airport, boarded Continental Flight No. 93 which left at 7:30 a.m. and arrived in San Francisco at 10:30 a.m. Helen, with Dianne, met me and drove me home. She gave me the news that Steve had voluntarily submitted to arrest in connection with occupation of the railroad tracks at Davis as a protest of President Nixon's recent initiative in Vietnam; he was released without going to jail or the need for bail bond, but his name appeared, along with many others, in the Davis paper. She also told me that the side of our station wagon was bashed in while Eric had it parked in the Kaiser Hospital parking lot in Walnut Creek when he was having his physical examination for his August position in Vermont with the Student Conservation Association.

I worked on Chem 1C lecture material. In the afternoon, Suki and I took a hike around Lafayette Reservoir. Lynne joined us for a Mother's Day dinner; Bill was home studying. Steve called at about 8:00 p.m. to wish Helen a happy Mother's Day. He gave us a report on his arrest last Tuesday evening. He was among the first contingent of

about 90 students arrested, and his hearing will be a week from tomorrow.

Monday, May 15, 1972 - Berkeley

Leo Brewer called me at 9:00 a.m. to ask if I would serve as the spokesman for the group fighting to preserve the Huckleberry Trail at the meeting of the East Bay Regional Park District Board of Directors on the afternoon of June 6 at the headquarters on Skyline Boulevard. I said that I would do so, but only in the event that my help is definitely needed as a last resort.

Bob Silva arrived from Oak Ridge over the weekend and will spend the next couple of weeks here to continue preparing for the chemical identification of any superheavy elements produced in the SuperHILAC.

I held my office hour from 11:00 a.m. to noon, had lunch with the Chemistry Department faculty, and taught my Chem 1C section.

Just after I walked up the hill to my office, Sheila told me that she had heard on the radio that George Wallace had been shot. I learned from subsequent radio reports that he had been shot at Laurel, Maryland, following a campaign speech, by 21-year-old Arthur Bremer. He was shot three times, the most serious in the spine, and was still in surgery in a Silver Springs hospital when I heard a progress report on the evening TV news (around 7:00 p.m.). Later reports indicated that he came through surgery satisfactorily, but he faces the possibility of major paralysis.

Suki and I took our pre-dinner hike to the water tank.

Tuesday, May 16, 1972 - Berkeley

Governor Wallace has survived his bullet wounds although the danger of paralysis of the lower part of his body persists.

Richard V. Schafer dropped in at 8:40 a.m. to have me sign a card for a retiring employee. Dick is the son of the Edward M. Schafers who had a grocery store on Telegraph Avenue between Oregon and Stuart, where we used to shop when we lived at 2808 Ellsworth Street. His folks now live just outside of Railroad Flat near Mokelumne Hill in the gold country.

I attended Professor Markowitz's Chem 1C lecture in the Physical Science Lecture Hall at 11:00 a.m. After the lecture I met Lynne and we walked up the hill to my office which I showed to her. I introduced her to all the girls in the office. Then, joined by Sheila, we had lunch in the Lab cafeteria.

Eric, Suki and I took a hike to the water tank.

Wednesday, May 17, 1972 - Berkeley - Mexico City

I walked down to the campus to attend Professor Markowitz's Chem 1C lecture from 9:00-10:00 a.m.

I conferred with Silva on our program for the chemical identification of the superheavy elements.

I had lunch in my office, then went down to the campus to teach my Chem 1C section in Room E. After this, Helen met me near Latimer Hall and drove me to San Francisco Airport where I boarded Western Airlines Flight No. 627, leaving at 3:45 p.m. and arriving in Mexico City at 9:30 p.m. Charlie Robbins boarded the plane at Los Angeles and we sat in adjoining seats.

I was met at the Mexico City Airport (where, this being the beginning of the wet season, we landed in a driving rain) by Maria Eugenia Ahumada of the Public Relations Department of CONACYT. Richard Bolin, who was scheduled to meet me, was not there, possibly because the plane was early. Robbins and I rode with Maria and a CONACYT driver to the Aristos Hotel (Reforma 276) where I checked into Room 1226, a room on the top floor with a marvellous view of the city. Robbins rode on to the Camino Real Hotel where he had his room reservation.

#### Thursday, May 18, 1972 - Mexico City

I met Bill Bevan, Walter Berl, James Butler, and Richard Bolin at 8:00 a.m. in the lobby of the hotel, feeling the effects somewhat of the 7,000-foot altitude of Mexico City. We walked to the nearby University Club. Here we had breakfast with Ing. Eugenio Mendez-Docurro, Minister of Communications and Transportation and Director of Consejo Nacional de Ciencia y Tecnologia (CONACYT), Alfredo Ramirez Araiza, Depto de Tratados y Acuerdos Bilaterales of CONACYT, and Bertha Vasquez, assistant to Mendez and in charge for CONACYT of arrangements for the joint AAAS-CONACYT meeting. We met to discuss planning for the joint AAAS-CONACYT meeting on "Science and Man in the Americas" to be held in Mexico City during late June and early July of 1973. We agreed the meeting will include scientists from Latin American countries, invited distinguished speakers from Europe (whom Mendez and I will invite via jointly signed letters), industrial and national exhibits and possibly a science fair for youth, an invitation to President Echeverria to serve as honorary president of the joint meeting and also as a participant in a special program on "To Harness What Nature Gives Us" (along the lines of his interview article in the UNESCO Journal Impact of Science on Society), national Mexican TV and possible transmission to the U.S., involvement of the Mexican general public in various ways, etc. President Echeverria will visit Washington around June 16, at which time I may see him to discuss the joint meeting.

Mendez, an obviously well-educated communications engineer, was very enthusiastic about the meeting and pledged his help to get wide involvement of Mexican scientists as well as engineers and technologists. We recalled our meeting at the dinner given by Ambassador Fulton Freeman during my visit to Mexico City in April 1968. I gave him an autographed copy of Man and Atom and also gave him another to give to President Echeverria.

Bevan and I then rode with Miss Vasquez to the rented main headquarters of CONACYT at 1677 Ave. Insurgentes Sur. We went to the

Thursday, May 18, 1972 (con't)

8th floor and met in a conference room with Ramirez, Bolin, Berl, and Mrs. McAlpine (of CONACYT) to plan further details of the meeting.

At noon I rode to the Nuclear Institute (Ave. Insurgentes Sur No. 1079, 3rd floor), escorted by Mrs. Sanders of CONACYT. (The planning meeting continued during the remainder of the day. Butler met with his counterpart in a separate session to plan the public relations aspects of the joint meeting.)

At the Nuclear Energy Institute I met with Dr. Fernando Alba Andrade, Director General of the National Nuclear Energy Institute (the successor to the Mexican CNEN) and Director of the National Nuclear Laboratory at Salazar, Dr. Carlos Graef Fernandez, General Coordinator of the Institute, Dr. Marcos Mazari, in charge of the van de Graaff at the National Nuclear Center, and Charles Robbins. Alba and I recalled his visit to Washington in April 1971 when I hosted a lunch for him and our meetings at Geneva and Vienna in 1971.

I described the planned joint AAAS-CONACYT meeting. Alba told us about the 700 MW reactor (probably G.E. boiling water) to be built by 1976 at Laguna Verde, about 150 miles east of Mexico City on the Gulf of Mexico; they hope to complete it before the end of President Echeverria's term at the end of 1976. Alba became chairman of the Mexican CNEN when Echeverria became president in January 1971 and then became Director General of the National Institute of Nuclear Energy when that replaced the CNEN early this year. I mentioned Commissioner Ramey's forthcoming visit to Mexico City on June 5 to discuss geothermal energy and desalting, and they are looking forward to it. Robbins and I invited Alba to attend the International AIF-ANS meeting (of which I am serving as Honorary Chairman) in Washington the week of November 12, 1972. Robbins left to catch a plane to Dallas where he has a dinner meeting this evening.

Gonzales Duran, Secretary of the Institute of Nuclear Energy, joined us, and the four of us (Alba, Graef Fernandez, Duran, and I) rode to the San Angel district in the southern part of Mexico City where we had lunch from 2:00-3:30 p.m. in the San Angel Inn. The Inn is housed in an old 17th century hacienda that was built by a rich businessman who ran the Mexican analogy of the U.S. Wells Fargo operation. At lunch we talked a good deal about the interest in and work on the superheavy elements.

After lunch Mazari, who had showed me his group's van de Graaff research program during my visit to the National Nuclear Center in April 1968, took me in his Volkswagon on a sightseeing tour of sections of the southern part of Mexico City. We drove around University City, where the National Autonomous University of Mexico is situated; this is a huge place with 110,000 full-time students and an area of six square kilometers. The students are extremely active politically--demonstrations were in progress against the Vietnam situation just last night. The rector must enter his office building, the multi-storied "Rectoria," through a special gated and guarded door and then proceed to his office via a private elevator.

Thursday, May 18, 1972 (con't)

We drove through the "Jardines del Pedregal" (Gardens of Lava) districts, where the most affluent residents of Mexico City live. Here I saw the lava formations, still used as parts of stone walls, etc., which came from the lava eruption and flow of the nearby Xitle Volcano (visible in the distance) that overwhelmed the area some 2000 to 2200 years ago. Most of the houses in this district have walls around them. We also drove by the Cuicuito Pyramid, which was engulfed in that eruption of Xitle Volcano. This round pyramid now extends some 30 feet above the surrounding lava level, and excavations have shown that some additional 15 feet of its original height is now below the present ground level.

We drove back to central Mexico City along "El Periferico," the peripheral highway ringing Mexico City and which will be some 40 kilometers in circumference when it is completed. A magnificent subway (which was built in three years) has recently opened in the city, with a north-south and an east-west branch. Visible from El Periferico was Los Pinos, the home and offices of the Mexican President. Mazari let me off at the Aristos Hotel.

At about 6:30 p.m., Bevan, Berl, Butler, and I rode with a young man, David Romero of CONACYT, to the home of Mr. and Mrs. Bolin to attend a reception in our honor. Among those present were: Bertha B. Vasquez of CONACYT; Lic. and Mrs. Alfredo Ramirez Araiza, Depto. de Tratados y Acuerdos Bilaterales, CONACYT; James Louck, Los Alamos Scientific Laboratory; M. R. (Dick) Campbell, Director, Parque Industrial de Nogales, Nogales, Sonora, Mexico; Mr. and Mrs. Shankar Dadoo, Gerente General, Pfizer, S.A.; Mr. and Mrs. Al R. Wichtrich, Vice Presidente Ejecutivo, American Chamber of Commerce of Mexico; Dr. and Mrs. Guillermo Soberon, Coordinador de Asuntos Cientificos, UNAM; Mr. and Mrs. Alfredo Santos, Ex-Director, Confederacion de Camaras de Comercio Nacionales, Optica Luz; Dr. and Mrs. Marcos Moshinsky, Director de Investigacion de Fisica, UNAM; Dr. Andre Simonpietri, Science Attache, U.S. Embassy; Dr. and Mrs. Fernando Alba Andrade, Director General, Instituto Nacional de Energia Nuclear; Ing. and Mrs. Edward J. Wygard, Economist and Consultant for ADL in Mexico; Mr. and Mrs. Robert Banks, Science Director, Ford Foundation in Mexico; Mr. and Mrs. John Funari, Director, Ford Foundation Mexico; Ing. and Mrs. Ignacio Deschamps, Director, Instituto Mexicano de Investigaciones Technologicas; Dr. Harold E. Dregne, Chairman of Agronomy, Texas Tech; Dr. Alfredo Barrera, Director, Museo de Historia Nacional; Dr. and Mrs. Fernando Medellin Leal, Director, Instituto de Zonas Desierticas; Ing. and Mrs. Rafael Rojas, Laboratorios Nacionales de Fomento Industrial; Lic. Victor Urquidi, Presidente, Colegio de Mexico; Dr. and Mrs. Carlos Graef Fernandez; and Mr. and Mrs. Luis Lopez Morton, Head, Mexico City Chamber of Commerce.

Al Wichtrich and Alfredo Santos made it very clear that they wish to help in every way possible with the joint meeting. After the reception, Mrs. Jean Bolin, with their seventeen-year-old daughter Judy, drove me back to the Aristos Hotel at 10:30 p.m. Bevan, Butler and Berl stayed on for a bite to eat. We drove through the "Pink Zone," a sort of central shopping, restaurant and hotel area in which the buildings used to be painted pink.

Friday, May 19, 1972 - Mexico City - Lafayette

I had breakfast in my room, then joined Bill Bevan in a taxi to the CONACYT building. Here Bevan, Berl, Bolin, and I met with Mexican scientists and engineers who are scheduled to help organize the nine Central Themes that are to serve as the basis for our joint meeting. The six Mexican co-arrangers for the Central Themes who were present were: Dr. Alfredo Barrera, Director, Museo de Historia Natural (Ecology and Development); Dr. Fernando Medellin Leal, Director, Instituto de Zonas Desierticas (Deserts and Arid Lands); Ing. Rafael Rojas, Laboratorios Nacionales de Fomento Industrial (Nutrition and New Food Technology); Dr. Emilio Rosenbleuth, Investigacion de Ingenieria, Universidad Nacional Autonoma de Mexico (Earthquakes and Earthquake Engineering); Dr. Victor Urquidi, Presidente, Colegio de Mexico (Science Technology and Social Change); and Dr. Edmundo de Alba, Coordinador Tecnico, Consejo Nacional de Ciencia y Tecnologia. Lic. Alfredo Ramirez Araiza, Depto. de Tratados y Acuerdos Bilaterales, CONACYT, presided. Also present were Miss Vasquez and Mrs. McAlpine, and Harold Dregne, representing the AAAS for the topic "Deserts and Arid Lands."

Before the meeting, Ramirez showed me an article in yesterday's El Dia in which Flerov is claiming the discovery of element 105.

Ramirez opened the meeting at 10:15 a.m. with some welcoming and explanatory remarks in Spanish; he spoke for about 30 minutes. Bevan spoke next, describing the history, present role, and future aspirations of the AAAS.

I spoke next for about ten minutes. I mentioned my understanding of Spanish (based on my high school courses), my role as President and Chairman of AAAS and the accidental timing which casts me in my present role, my pleasure at meeting with six of the nine Mexican Central Theme co-arrangers, our successful meeting yesterday with Mendez-Docurro, the possible involvement of President Echeverria as a sponsor and an actual participant and our possible meeting with him during his forthcoming visit to Washington next month to confer with President Nixon, and my hope to get better acquainted and to work together with the co-arrangers to assure complete success for our historic, timely, and important, joint meeting.

Berl spoke next to describe many of the details of the prodigious and intricate task of arranging such a complicated joint meeting; he stressed the short time schedule and the urgency of going ahead with the numerous tasks that face us.

Rosenbleuth left the meeting at 11:15 a.m. Following the individual talks, there was a general discussion in which numerous questions were explored and answered. Butler, who had been meeting separately to discuss the TV and communications aspects, joined our meeting during this time. Ramirez brought the meeting to a close at noon.

Bevan, Berl, Butler, and I then rode with a CONACYT driver to the Aristos Hotel. I checked out, bought a copy of Traveler's Guide to Mexico in the hotel newsstore, and then had lunch with Bevan, Berl,



Butler, and Bolin in the Terrace Room on the second floor of the hotel. I inscribed copies of Man and Atom for Alfredo Santos and Victor Urquidi which will be delivered to them by Bolin. I told Berl and Bolin I would send additional inscribed copies to other Mexicans associated with the joint meeting if they would forward the names and addresses to Mrs. Saxby, which they said they would do.

After lunch, Bevan, Butler and I were driven to the Mexico City Airport by a CONACYT driver. Here I bought some simple presents--a small collection of Mexican coins for Dianne, a Mexican coin watch fob for Eric, and a little, decorative, old metallic bell for Helen.

At the airport I met Bernard L. Hoffman, Manager, Southwest Regional Office of NUS Corporation in Sherman Oaks, California. He had been advising Mexican Institute of Nuclear Energy people in connection with their impending purchase (probably from G.E.) of the 700 MW nuclear power plant for operation at Laguna Verde.

Just as I boarded Western Airlines Flight No. 638, my picture was taken by a photographer with the newspaper Excelsior. The plane was packed, with every seat taken. We took off at 4:15 p.m., in beautiful weather, flew northwest over Mexico to Los Angeles, where we made a scheduled stop and went through immigration and customs, then on to San Francisco where we arrived at 9:00 p.m. Helen met me, along with Dianne, and drove me home where I found a pile of papers from my office awaiting me.

#### Saturday, May 20, 1972 - Lafayette

I spent a good part of the day reading the papers and correspondence that accumulated during my absence. Eric, Suki and I took a hike to the water tank.

#### Sunday, May 21, 1972 - Lafayette

I spent a good part of the day reading Chem 1C material. In the afternoon, Suki and I took a hike in the hills at Lafayette Reservoir. Eric and his friend Scott Rich recorded on tape their guitar rendition of the fugue that Eric wrote as part of an assignment for his humanities class. Lynne and Bill came for dinner and spent the evening.

#### Monday, May 22, 1972 - Berkeley

I held my office hour in 446 Latimer Hall. Mason Willrich of the University of Virginia called. He wanted to see me tomorrow, but my schedule won't permit it; he will write regarding an appointment during an August trip to the Bay Area.

I had lunch with the Chemistry faculty and taught my Chem 1C section in Room C.

Today I received from N. A. Perfilov a copper/bronze medal and lapel badge dedicated to the 50th anniversary of the V. G. Khlopin Radium Institute in Leningrad.

Chris Phillips, Suki and I took a hike to the water tank. Eric was at Acalanes High School working on a videotape in connection with his biology class. We watched on TV a number of aspects of President Nixon's visit to Moscow. The visit seems to be very successful with prospects for signing a number of agreements, including an important one on arms limitations (SALT).

Tuesday, May 23, 1972 - Berkeley

At 11:00 a.m., I went down to the campus to show Melvin Calvin my proposed editorial for Science, "For a United States Energy Agency." I then went to the Physical Sciences Lecture Hall to hear Professor Samuel Markowitz's Chem 1C lecture.

After the lecture, I went to the Hart Room of the Men's Faculty Club to have lunch with Marian Diamond, Associate Dean of the College of Letters and Science, and a number of College Advisors, plus a representative of Cal-in-the-Capitol. They were Betty Jones, Ron Kihara, Ebba McArt, Sue Donald, Greg Mark, and Karen Hern. (Mrs. McArt is a native of Sweden, having arrived in this country about five years ago. Ron Kihara is our own Sylvia's husband.) Mrs. Hern gave us a good description of the reactions of students who have participated in the Cal-in-the-Capitol program. I indicated that the key to ensuring good reception for our students is to work through people we know in the various agencies and with members of Congress who have been sympathetic to the program on the basis of past performance. We spent a good deal of time in general conversation about students, my schedule and responsibilities, their duties as college advisors, and so forth.

I then walked back up the hill and met with Bob Silva and our visitors from Los Alamos, Darleane Hoffman and Jim Sattizahn, in the office off of our chemistry laboratory, Room 203, Building 70. We discussed our planned cooperative program and agreed that they might do radiochemistry on SuperHILAC targets both here and at Los Alamos. We decided that perhaps two people at a time from Los Alamos might work with us, alternating in composition, and such names as Francine Lawrence, Bill Daniels, Kurt Wolfsberg, Louise Smith, and Darleane Hoffman were mentioned. After our meeting, Bob took them up to the SuperHILAC to show them the facilities there.

At 3:00 p.m., I met with Gerald W. Johnson, Director of the AEC's new Division of Applied Technology, in my office along with Jack Hollander. Jerry has been here yesterday and today discussing various aspects of the energy problem and related matters, with the possibility in mind of his Division's supporting some of the work here. Jerry felt that the best prospects for support were for the work on geothermal power and coal combustion as well as work on seismic problems. He feels that solar energy is too long-range to make it as profitable a field of investigation, but we tried to urge him to support some of the very interesting new ideas that are being developed here in this field. We also discussed the idea that the Atomic Energy Commission be converted into a U.S. Energy Agency.

At 4:00 p.m., I went up to the HILAC and continued the meeting with Hoffman, Sattizahn, and Silva, together with Albert Ghiorso and

Matti Nurmia. We discussed the use of SASSY for the identification of superheavy elements and the ways in which chemical separations on thick targets could increase the sensitivity in hunting for these elements should the results with SASSY be negative.

Dianne, Suki and I took a hike to the water tank. Eric had dinner, along with his fellow French student Linda Walker (Miss Contra Costa), at the home of his French teacher, Mrs. Connery.

Wednesday, May 24, 1972 - Berkeley

Helen drove me to work because Eric needed a car today--it is senior class "ditch day" and they are going to the beach at Santa Cruz; Helen also needed a car.

I sent Phil Abelson the editorial on "Energy" that we discussed during my recent visit to Washington. At 9:00 a.m., I attended Professor Markowitz's Chem 1C lecture.

Irene Cohn came to see me in my office at 10:30 a.m. She is taking a course on the social impact of technology in which all of the other students, and to some extent the instructor, are pretty much anti-technology and anti-nuclear power. Her father works in the PG&E plant in San Jose, which has given her the opportunity to get somewhat acquainted with nuclear power, and she has undertaken to defend it in her class. She asked me a number of questions concerning the safety aspects, our future need for energy, and so forth. She told me that she was born in Denmark, and we exchanged a few phrases in Danish and Swedish.

I had lunch in my office, then went down to the campus to teach my Chem 1C section in Room E.

At 3:00 p.m., I attended a meeting of the Lawrence Hall of Science Advisory Committee in the LHS Conference Room. Present were George Pimentel, Chairman, Alan Portis, Director of LHS, John Whinnery, Jim Cason, Dave Wake, who came in late, Mac Laetsch, Harry Morrison, Fred Reif, Wilbur Somerton, Bob Karplus, Leon Henkin, John Hearst, John Matlin, Bob Content, Dave Blackwell, Harvey White, and Howell Daly.

Director Portis gave a status report on the LHS, along the lines of his written "Director's Report--Winter Quarter 1972." Karplus made a report on the SCIS program, including a test on electrical connections that he gives to sixth graders. Reif made a report on the recommendations of the special subcommittee of the LHS Advisory Committee based on the written report of this subcommittee.

At the end of the meeting, we went into executive session (i.e., only members of the Advisory Committee). There ensued a vigorous debate on whether we should adopt the subcommittee's report, with its recommendation of a Planning Committee, in view of the opposition of Portis and Laetsch to such a Planning Committee (because, they felt, it might usurp some of the functions of the Executive Committee). Pimentel and I stressed that the appointment of such a committee might give some key Regents the confidence they need to support the appoint-

ment as Director of LHS the person (i.e., Laetsch) who is being recommended by the Ad Hoc Faculty Committee. These Regents fear that this appointee would not support the original objectives of the LHS. I moved adoption of the subcommittee's report and my motion carried.

Helen, with Dianne, met me after the meeting at about 5:45 p.m. They had had the harrowing experience of seeing a two-year-old boy, Douglas Wu, hit and killed by a University of California minibus in the LHS front parking lot. Helen wrote out a brief eyewitness report for the police. The boy had stepped out in front of the bus from between the parked cars.

We met Anna Carol Dudley (who was my secretary when I was Chancellor) and her twelve-year-old son Shannon and a younger son in the parking lot just as we were leaving. Helen drove us home. Suki and I took a hike to the water tank.

Thursday, May 25, 1972 - Lafayette - New York

Helen drove me to the San Francisco Airport where I boarded TWA Flight No. 800, which left at 9:30 a.m. and arrived at New York's Kennedy Airport at 5:30 p.m. I took the Carey Airlines Bus into New York City and checked into the Chemists' Club, Room 739.

I had dinner at the Club with Shirley Rubenstein (Jane's mother) and her fiance Al Badain, who is in the process of retiring from his lifetime position as coach at Erasmus High School in Brooklyn. Al was the coach of the Erasmus basketball team that beat the Powers High School team on which Lew Alcindor played--this occurred in Lew's freshman year and was the only loss the Powers team had during his four years in high school; the Erasmus team had an outstanding player, Cunningham, who is now playing for the Philadelphia 76ers.

Friday, May 26, 1972 - New York - Lafayette

I had breakfast in the Chemists' Club dining room, then took a taxi to the General Motors Building to attend a meeting of the Board of Directors of the Dreyfus Third Century Fund at the Dreyfus headquarters board room on the 35th floor.

Howard Stein served as chairman of the meeting, calling it to order at 10:15 a.m. Present were Lucy Benson, Vernon Jordan, George Harrar, John McCloy, Robert Goheen, Jerome Hardy, David Bronheim, David Burke, Michael Glass, William Berkowitz, Lawrence Greene, Nicholas Ciriello, and Leonard Leiman. Vernon Jordan left the meeting at 10:30 a.m. We followed the printed agenda (copy attached). On the matter of Directors' fees, it was determined that the fee be \$7,500 due in June and thence \$10,000 per year with no additional fee for meeting attendance (to be paid on a quarterly basis).

At 10:45 a.m., John McCloy received a phone call informing him that word had just come from Moscow that a SALT agreement had been signed. I called attention to the key role that McCloy played in disarmament matters in the early days of the Kennedy administration.

## THE DREYFUS THIRD CENTURY FUND

## PROPOSED AGENDA

May 26, 1972

- I. MINUTES
- II. LEGAL MATTERS
  - A. Status of the Board of Directors
    1. Dr. Goheen's Application
    2. Filling of Vacancies
  - B. Registration Statement for the Continuous Offering
  - C. The Distribution Agreement with The Dreyfus Sales Corporation
    1. INA Variable Annuity
    2. Consideration of Agreement
  - D. Purchase of Shares at Net Asset Value
- III. DISCUSSION OF DECLARATION OF A DIVIDEND
- IV. FIXING OF DIRECTORS' FEES
- V. ELIGIBLE LIST OF INVESTMENTS
  - A. Companies receiving special consideration
  - B. Industry Analysis
    1. Airlines
    2. Apparel
    3. Cable Television
    4. Copper
    5. Home Appliances
    6. Home Building Supply
    7. Home Furnishing
    8. Hospital Supply
    9. Insurance Brokers
    10. Insurance Companies
    11. Leisure Time
    12. Machine Tools
    13. Multi-market Companies
    14. Paper
    15. Publishing (Book)
- VI. REPORT ON PORTFOLIO
- VII. GENERAL BUSINESS DISCUSSION

There will also be considered any other matters which any Director may wish to discuss.

After the formal business matters, more of the staff (Laura Parmer, Marcella Fava, Jim Cunningham, Darryl Fagin, Mike Taylor, Jeffrey Friedman, and Margaret Evans) entered the meeting, which then went into the discussion of policies and details concerning the purchase of stocks for the Dreyfus Third Century Fund according to our criteria.

At 11:40 a.m., Chairman James Schlesinger called to tell me the SALT agreement will be signed at 11:00 p.m. Moscow time tonight. He told me that I. Rabi is resigning as the U.S. representative on the IAEA Scientific Advisory Committee and wants me to think about taking this spot; I said I might meet with him about this during my June trip to Washington. He also told me that Keith Glennan is resigning as the U.S. Ambassador to the IAEA and Tape will probably replace him.

Harrar and Goheen left at 11:45 a.m. As he left, I talked to Harrar to emphasize my hope that the Rockefeller Foundation will give financial support to the AAAS plan to set up an international office; he said he will write me about it.

We continued the discussion of individual companies as measured against our criteria through lunch, which was served in the conference room. Lucy Benson left at 1:00 p.m., leaving only John McCloy and me as outside Directors. Stein adjourned the meeting at 2:15 p.m. I continued discussion of some individual companies with Friedman, after which he took me on a tour of the premises. At 3:00 p.m., I said goodbye to Stein in his office--he is flying to Europe this evening. Michael Glass escorted me downstairs to a car which was waiting to drive me to Kennedy Airport. Here I boarded TWA Flight No. 49, which left at 5:45 p.m. and arrived in San Francisco at 7:50 p.m.

Helen, with Dianne, met me and drove me home. Eric and his friend Niels Sorenson (who is an AFS exchange student from Switzerland living with the Connerys) went to hear George McGovern speak at Sun Valley Shopping Center this evening.

The main provisions of the SALT agreement signed in Moscow at 11:14 p.m. Moscow time are: limitation of Anti-Ballistic Missile (ABM) Systems and interim agreement on limitations of strategic offensive arms [i.e., intercontinental ballistic missiles (ICBM) and submarine-launched ballistic missiles (SLBM)].

#### Saturday, May 27, 1972 - Lafayette

I spent a good part of the day reading correspondence, papers, journals, etc. that accumulated during my absence. In the afternoon, I played 18 holes of golf with Eric at the Claremont Country Club. Eric shot 95, I 103.

#### Sunday, May 28, 1972 - Lafayette

At 10:30 a.m., I watched on TV, directly from Moscow, President Nixon's talk to the Soviet people concerning the results of his visit to the Soviet Union, especially the signing of the SALT agreement. He called for friendship and increased cooperation between the Soviet and American people.

I continued reading papers, etc. accumulated during my absence. Eric and I played 18 holes of golf at the Claremont Country Club. Eric shot 98, I 96. Lynne and Bill came by for dinner and spent the evening. Eric had a date with Lorna McRae to take her to a movie--his first formal date.

I watched the TV program Face the Nation. On it, George McGovern and Hubert Humphrey debated in the Los Angeles CBS station.

Monday, May 29, 1972 - Berkeley

Although it is a holiday today, I worked in my office until about 2:00 p.m. I went over the arrangement of my books and other matters with Sheila and had lunch at my desk.

At 2:00 p.m., I attended a meeting at the home of Mr. and Mrs. Roger Reeve to discuss plans for a group to support the preservation of the Huckleberry Trail area. We decided to call our group Citizens for Urban Wilderness Areas (CUWA), and the group concerned with the Huckleberry area will be the Huckleberry Botanic Preserve Committee.

Present at the meeting were Mary Jefferds, Alice Howard, Helen Morrison, Geraldine Jackson, Margaret Bowman, Mary Jane Sills, Roger Reeve, Marian Reeve, Don de Fremery, Lucretia Edwards, Leo Brewer, Laddie Gilmore, Leonora Strohmaier, Baki Kasapligi, Katherine Caldwell, Dan Luten, Susan Jean Fruge, and Joyce Burr. In addition, the following who were not present can be considered members of CUWA: William Landis, Mary Ashton, and Carl Koerper.

We will appear before the meeting of the East Bay Regional Park District Board at their headquarters at 2:00 p.m. on June 6. Following a presentation by the Chairman of the Huckleberry Trail Advisory Committee, Dr. Howard L. Cogswell, we will make our presentation and I will act as spokesman for our group. We will attempt to convince the Board to acquire the entire Huckleberry area, since it is the entire habitat that is important for the preservation of the unique plant life of the Huckleberry area.

Today President Richard Nixon and General Secretary Leonid Brezhnev released a joint US-USSR communique which will intensify bilateral cooperation in the areas of: limitation of strategic armaments, commercial and economic relations, maritime matters--incidents at sea, cooperation in science and technology (including the establishment of a Joint Commission on Scientific and Technical Cooperation), cooperation in space, cooperation in the field of health, environmental cooperation, exchanges in the fields of science, technology, education, and culture. The posture of each country and areas for peaceful cooperation were clarified on international issues in regard to Europe, the Middle East, Indochina, disarmament issues, and strengthening the United Nations (copy of communique as printed in The San Francisco Chronicle, 5/30/72, attached).

Dianne, Suki and I took a hike to the water tank.

# Summit Communiqué

Moscow

From the text of a joint communiqué issued by President Nixon and Soviet leaders at the end of Moscow summit talks:

## Bilateral Relations

Guided by the desire to place U.S.-Soviet relations on a more stable and constructive foundation, and mindful of their responsibilities for maintaining world peace and for facilitating the relaxation of international tension, the two sides adopted a document entitled: "Basic Principles of Mutual Relations Between the United States of America and the Union of Soviet Socialist Republics," signed on behalf of the U.S. by President Nixon and on behalf of the U.S.S.R. by General Secretary Brezhnev.

Both sides are convinced that the provisions of that document open new possibilities for the development of peaceful relations and mutually beneficial cooperation between the U.S.A and the U.S.S.R.

Having considered various areas of bilateral U.S.-Soviet relations, the two sides agreed that an improvement of relations is possible and desirable. They expressed their firm intention to act in accordance with the provisions set forth in the above mentioned document.

As a result of progress made in negotiations which preceded the summit meeting, and in the course of the meeting itself, a number of significant agreements were reached. This will intensify bilateral cooperation in areas of common concern as well as in areas relevant to the cause of peace and international cooperation.

## Limitation of Strategic Armaments

The two sides gave primary attention to the problem of reducing the danger of nuclear war. They believe that curbing the competition in strategic arms will make a significant and tangible contribution to this cause.

The two sides attach great importance to the treaty on the limitation of anti-ballistic missile systems and the interim agreement on certain measures with respect to the limitations of strategic offensive arms concluded between them.

These agreements, which were concluded as a result of the negotiations in Moscow, constitute a major step towards curbing and ultimately ending the arms race.

They are a concrete expression of the intention of the two sides to contribute to the relaxation of international tension and the strengthening of confidence between states, as well as to carry out the obligations assumed by them in the Treaty on the Nonproliferation of Nuclear Weapons, Article VI. Both sides are convinced that the achievement of the above agreements is a practical step toward saving mankind from the threat of the outbreak of nuclear war. Accordingly, it corresponds to the vital interests of the American and Soviet peoples, as well as to the vital interest of all other peoples.

The two sides intend to continue active negotiations for the limitation of strategic offensive arms and to conduct them in a spirit of good will, respect for each other's legitimate interests and observance of the principle of equal security.

Both sides are also convinced that the agreement on measures to reduce the risk of outbreak of nuclear war between the U.S.A. and the U.S.S.R., signed in Washington Sept. 30, 1971, serves the interest not only of the Soviet and American peoples, but of all mankind.

## Commercial and Economic Relations

Both sides agreed on measures designed to establish more favorable conditions for developing commercial and other economic ties between the U.S.A. and the U.S.S.R. They agree that realistic conditions exist for increasing economic ties. These ties should develop on the basis of mutual benefit and in accordance with generally accepted international practice.

Believing that these aims would be served by conclusion of a trade agreement between the U.S.A. and the U.S.S.R., the two sides decided to complete in the near future the work necessary to conclude such an agreement. They agreed on the desirability of credit arrangements to develop mutual trade and of early efforts to resolve other financial and economic issues. It was agreed that a lend-lease settlement will be negotiated concurrently with a trade agreement.

In the interests of broadening and facilitating commercial ties between the two countries, and to work out specific arrangements, the two sides decided to create a U.S.-Soviet joint commercial commission. Its first meeting will be held in Moscow in the summer of 1972.

Each side will promote the establishment of effective working arrangements between organizations and firms of both countries and encouraging the conclusion of long-term contracts.

## Maritime Matters, Incidents at Sea

The two sides agreed to continue the negotiations aimed at reaching an agreement on maritime and related matters. They believe that such an agreement would mark a positive step in facilitating the expansion of commerce between the United States and the Soviet Union.

An agreement was concluded between the two sides on measures to prevent incidents at sea and in air space over it between vessels and aircraft of the U.S. and Soviet Navies. By providing agreed procedures for ships and aircraft of the two navies operating in close proximity, this agreement will diminish the chances of dangerous accidents.

## Cooperation in Science and Technology

It was recognized that the cooperation now under way in areas such as atomic energy research, space research, health and other fields benefits both nations and has contributed positively to their over-all relations. It was agreed that increased scientific and technical cooperation on the basis of mutual benefit and shared effort for common goals is in the interest of other nations and would contribute to a further improvement in their bilateral relations. For these purposes the two sides signed an agreement for cooperation in the fields of scientific technology. A U.S.-Soviet joint commission on scientific and technical cooperation will be created for identifying and establishing cooperative programs.



## Cooperation in Space

Having in mind the role played by the U. S. and the U.S.S.R. in the peaceful exploration of outer space, both sides emphasized the importance of further bilateral cooperation in this sphere. In order to increase the safety of man's flights in outer space and the future prospects of joint scientific experiments, the two sides agreed to make suitable arrangements to permit the docking of American and Soviet spacecraft and stations. The first joint docking experiment of the two countries' piloted spacecraft, with visits by astronauts and cosmonauts to each other's spacecraft, is contemplated for 1975. The planning and implementation of this flight will be carried out by the U.S. National Aeronautics and Space Administration and the U.S.S.R. Academy of Sciences, according to principles and procedures developed through mutual consultations.

## Cooperation in the Field of Health

The two sides concluded an agreement on health cooperation which marks a fruitful beginning of sharing knowledge about, and collaborative attacks on, the common enemies: disease and disability. The initial research efforts of the program will concentrate on

health problems important to the whole world — cancer, heart diseases, and the environmental health sciences.

This cooperation subsequently will be broadened to include other health problems of mutual interest. The two sides pledged their full support for the health cooperation program and agreed to continue the active participation of the two governments in the work of international organizations in the health field.

## Environmental Cooperation

The two sides agreed to initiate a program of cooperation in the protection and enhancement of man's environment. Through joint research and joint measures, the United States and the U.S.S.R. hope to contribute to the preservation of a healthful environment in their countries and throughout the world. Under the new agreement on environmental cooperation there will be consultations in the near future in Moscow on specific cooperative projects.

## Exchanges in the Fields of Science, Technology, Education and Culture

Both sides note the importance of the agreement on exchanges and cooperation in scientific, technical, educational, cultural, and other fields in 1972-1973, signed in Moscow on April 11, 1972. Continuation and expansion of bilateral exchanges in these fields will lead to better understanding and help improve the general state of relations between the two countries. Within the broad framework provided by this agreement the two sides have agreed to expand the areas of cooperation, as reflected in new agreements concerning space, health, the environment and science and technology.

The U.S. side noting the existence of an extensive program of English-language instruction in the Soviet Union, indicated its intention to encourage Russian-language programs in the United States.

## Europe

In the course of the discussions on the international situation, both sides took note of favorable developments in the relaxation of tensions in Europe.

Recognizing the importance to world peace of developments in Europe, where both World Wars originated, and mindful of the responsibilities and commitments which they share with other powers under appropriate agreements, the U.S.A. and the U.S.S.R. intend to make further efforts to ensure a peaceful future for Europe, free of tensions, crises and conflicts.

They agree that the territorial integrity of all states in Europe should be respected.

Both sides view the Sept. 3, 1971, quadripartite agreement relating to the western sectors of Berlin as a good example of fruitful cooperation between the states concerned, including the U.S.A. and the U.S.S.R. The sides believe that the implementation of that agreement in the near future, along with other steps, will further improve the European situation and contribute to the necessary trust among states.

Both sides welcomed the treaty between the U.S.S.R. and the Federal Republic of Germany signed on Aug. 12, 1970. They noted the significance of the provisions of this treaty as well as of other recent agreements in contributing to confidence and cooperation among the European states.

The U.S.A. and the U.S.S.R. are prepared to make appropriate contributions to the positive trends on the European continent towards a genuine detente and the development of relations of peaceful cooperation among states in Europe on the basis of the principles of territorial integrity and inviolability of frontiers, non-interference in internal affairs, sovereign equality in independence and renunciation of the use or threat of force.

The U.S. and the U.S.S.R. are in accord that multilateral consultations looking toward a conference on security and cooperation in Europe could begin after the signature of the final quadripartite protocol of the agreement of Sept. 3, 1971. The

two governments agree that the conference should be carefully prepared in order that it may concretely consider specific problems of security and cooperation and thus contribute to the progressive reduction of the underlying causes of tension in Europe. This conference should be convened at a time to be agreed by the countries concerned, but without undue delay.

Both sides believe that the goal of ensuring stability and security in Europe would be served by a reciprocal reduction of armed forces and armaments, first of all in central Europe. Any agreement on this question should not diminish the security of any of the sides. Appropriate agreement should be reached as soon as practicable between the states concerned on the procedures for negotiations on this subject in special forum.

## The Middle East

The two sides set out their positions on this question. They reaffirm their support for a peaceful settlement in the Middle East in accordance with Security Council Resolution 242.

Noting the significance of constructive cooperation of the parties concerned with the special representative of the U.N. secretary general, Ambassador Jarring, the U.S. and the U.S.S.R. confirm their desire to contribute to his mission's success and also declare their readiness to play their part in bringing about a peaceful settlement in the Middle East. In the view of the U.S. and the U.S.S.R., the achievement would open prospects for the normalization and would permit, in particular, consideration of further steps to bring about a military relaxation in that area.

## Indochina

Each side set forth its respective standpoint with regard to the continuing war in Vietnamese and the situation in the area of Indochina as a whole.

The U.S. side emphasized the need to bring an end to the military conflict as soon as possible and reaffirmed its commitment to the principle that the political future of the South Vietnam should be left for the South Vietnamese people to decide for themselves, free from outside interference.

The U.S. side explained its view that the quickest and most effective way to attain the above-mentioned objectives is through negotiations leading to the return of all Americans held captive in the region, the implementation of an internationally supervised Indochina-wide cease-fire and the subsequent withdrawal of all American forces stationed in questions to be resolved by the Indochinese peoples themselves.

The United States reiterated its willingness to enter into serious negotiations with the North Vietnamese side to settle the war in Indochina on a basis just to all.

The Soviet side stressed its solidarity with the just struggle of the peoples of Vietnam, Laos and Cambodia for their freedom, independence and social progress. Firmly supporting the proposals of the DRV and the Republic of South Vietnam, which provide a realistic and constructive basis for settling the Vietnam problem, the Soviet Union stands for a cessation of bombings of DRV, for a complete and unequivocal withdrawal of the troops of the U.S.A. and its allies from South Vietnam, so that the peoples of Indochina would have the possibility to determine for themselves their fate without any outside interference.

### Disarmament Issues

The two sides expressed their positions on arms limitation and disarmament issues.

The two sides note that in recent years their joint and parallel actions have facilitated the working out and conclusion of treaties which curb the arms race or ban some of the most dangerous types of weapons. They note further that these treaties were welcomed by a large

majority of the states in the world, which became parties to them.

Both sides regard the convention on the prohibition of the development, production and stockpiling of bacteriological (biological) and toxic weapons and on their destruction, as an essential disarmament measure. Along with Great Britain, they are the depositories for the convention which was recently opened for signature by all states. The U.S.A. and U.S.S.R. will continue their efforts to reach an international agreement regarding chemical weapons.

The U.S.A. and the U.S.S.R., proceeding from the need to take into account the security interests of both countries on the basis of the principle of equality, and without prejudice to the security interests of third countries, will actively participate in negotiations aimed at working out new measures designed to curb and end the arms race. The ultimate purpose is general and complete disarmament, including nuclear disarmament, under strict international control. A world disarmament conference could play a role in this process at an appropriate time.

### Strengthening the United Nations

Both sides will strive to strengthen the effectiveness of the United Nations on the basis of strict observance of the U.S. charter.

They regard the United Nations as an instrument for maintaining world peace and security, discouraging conflicts, and developing international cooperation. Accordingly, they will do their best to support United Nations efforts in the interests of international peace.

Both sides emphasized that agreements and understandings reached in the negotiations in Moscow, as well as the contents and nature of these negotiations, are not in any way directed against any other country. Both sides proceed from the recognition of the role, the responsibility and the prerogatives

of other interested states, existing international obligations and agreements, and the principles and purposes of the U.N. charter.

Both sides believe that positive results were accomplished in the course of the talks at the highest level. These results indicate that despite the differences between the U.S.A. and the U.S.S.R. in social systems, ideologies, and policy principles, it is possible to develop mutually advantageous cooperation between the peoples of both countries in the interests of strengthening peace and international security.

Both sides expressed the desire to continue close contact on a number of issues that were under discussion. They agreed that regular consultations on questions of mutual interest, including meetings at the highest level, would be useful.

In expressing his appreciation for the hospitality accorded him in the Soviet Union, President Nixon invited General Secretary L. I. Brezhnev, Chairman N. V. Podgorny, and Chairman A. N. Kosygin to visit the United States at mutually convenient time. This invitation was accepted.

### Anti-Noise Experts Meet

Berlin

The Seventh Congress of the International Association Against Noise opened yesterday in Dresden, the East German News Agency reported.

About 300 scientists and anti-noise experts from more than 20 countries will discuss methods to combat noise at construction sites, in factories and in air and road traffic at the five-day congress, the agency said.

United Press

Tuesday, May 30, 1972 - Berkeley

Helen drove me to work. I walked down to the campus and, at 11:10 a.m., gave the main lecture in the Physical Sciences Lecture Hall for the Chemistry 1C course on "The Superheavy Elements." Sylvia and Sheila were in the audience.

From 12:15-1:30 p.m., I attended a meeting of the Energy and Resources Group (ERG) in the Director's Room of the Faculty Club. Present were Professor Charles K. Birdsall who acted as chairman, Richard Buxbaum, Bill Chinowsky, Jack Hollander, Todd La Porte, Kai Lee, Dan Lutten, and Gene Rochlin. We all agreed that an ERG program including graduate students at the Master's and Ph.D. levels should be set up but that it will require a lot of careful planning and hard work in order to steer it through the various university approval processes that are required.

I returned Paul McDaniel's call of last Friday. He told me that after 31 years of federal service, he has decided to retire while he is still ahead. He plans to relax and think for a while at their home in Arlington. (He mentioned that by retiring in June rather than last January, his retirement pay is increased by an additional 4.8% so that he will be receiving about 65% of his regular salary.) I also sent a letter to Charles A. Sommer at the AEC to be read to Cecil King at his retirement party on June 7 at the Naval Officers Club in Bethesda (copy attached).

Wednesday, May 31, 1972 - Berkeley - Los Alamos

I attended Professor Markowitz's Chem 1C lecture at 9:00 a.m. I had lunch in my office on the hill, then went back down to the campus to teach my Chem 1C section in Room E of Latimer Hall; we gave the class the third midterm of the quarter.

I walked back up the hill, conferred with Jack Hollander on the Environment and Energy Program, signed letters, etc., until 4:00 p.m. when Helen, with Dianne, came by and drove me to the San Francisco Airport. I boarded Continental Airlines Flight No. 94 which left at 6:45 p.m. and arrived at Albuquerque at 9:30 p.m. Here I was met by Dr. Joseph M. Carroll, Superintendent of Los Alamos Schools, and Peter Salgado, member of the Los Alamos School Board. Carroll drove us to Los Alamos, where we arrived at about 11:40 p.m.

Thursday, June 1, 1972 - Los Alamos

I had breakfast in the dining room of the Inn, again feeling the effects of the 7000-foot altitude. Bob Penneman picked me up after breakfast and drove me to DP-West, Building 3, where we met in the library with Thomas Newton, Hunter Hill, and Joe Mann. We discussed writing assignments for the revision of our book Chemistry of the Actinide Elements. Newton has written a draft chapter on the kinetics of the reactions of uranium, neptunium, and plutonium ions, of which he will send copies to Katz and me. Hill has an outline of a chapter on actinide metals which I approved--it will feature the Engel-Brewer correlation. Mann will give us some material on calculations of electronic structures.

Berkeley  
XXXXXX

May 30, 1972

MR. CECIL KING

Dear Cece:

I was interested to learn that you have decided to retire from government service. I am sure that this does not mean actual retirement, for you are much too young and vigorous to settle for that.

It is impossible for me adequately to express my appreciation for your devoted and efficient help to me during my tenure as Chairman. As I recall, I received one of my first briefings from you during an automobile ride to Germantown a day or so after the announcement of my appointment. Your help on those travels to the far corners of the earth in the line of duty was indispensable. Your aid in countless ways contributed immeasurably to making the Chairman's task a bearable one.

I have known few people with such a versatile repertoire of talents. Your loyalty was a source of strength, and your ubiquitous humor an inspiration.

Helen and I extend to you and Emily our very best wishes for a happy, fruitful, and active future.

With my warmest regards,

Cordially,

Glenn T. Seaborg

GTS/ssk

Thursday, June 1, 1972 (con't)

Nick Matwiyoff then drove me to the CNC-4 Building (Chemistry and Nuclear Chemistry) where he described to me the ICONS (Isotopes of carbon, oxygen, nitrogen, and sulfur) program established a couple of years ago (RAP to GAO, CNC-DO, 3/28/72). They produce stable carbon, nitrogen, and oxygen isotopes by distillation procedures and will have kilogram amounts by 1974. They will also produce sulfur isotopes by distillation. Tom Morgan, who is on sabbatical leave from the University of Texas, dropped by. Tom Mills showed me some distillation columns (they use CO, NO, and plan to use H<sub>2</sub>S). They plan to build a 700-foot CO column. Much of the column is below ground. A photographer took a number of pictures during this visit.

Nick then drove me to the Los Alamos Country Club, where I had lunch with a group from CNC-4. Among those present were: Robert Penneman; N. A. Matwiyoff (NMR specialty); Larned B. Asprey (heavy element, leader in fluorine chemistry); R. R. Ryan (x-ray crystallographer); F. Ruth Capron (secretary, also from 1966 ACS meeting); Terence Needham (post-doctoral); Llewellyn H. Jones (infrared-raman, "the dean of the U.S. effort"); Phillip Vergamini (metal organics); R. S. McDowell (vib. spectroscopy, "excellent"); Gregory Kubas (post-doc); Abraham Rosenweig (geology, microscopy, crystallographer); Donald Shepard (military pre-doctoral); Joseph Mann (heavy element calculations); Audry Giger (secretary); L. O. [Tom] Morgan (now is NMR specialist); Normand Blais (crossed molecular beams); Eiichi Fukushima (solid NMR); Basil Swanson (visiting staff, former post-doc); L. P. Varga (Professor, OSU, spectra of actinides). (The identifications and comments were provided by Bob Penneman.)

After lunch, I rode with Penneman back to DP-West. Here I met B. B. McInteer who is in charge of production for ICONS. (This is the group that furnished the N<sup>15</sup> used by Ghiorso and co-workers in the discovery of element 105.) Penneman agreed to draft a letter that I might send to all the people who are making contributions to The Chemistry of the Actinide Elements--this would bring them up-to-date on our schedule and our plan to emphasize the areas that are not emphasized in Cornelius Keller's book.

Walter Berl called me from Washington to say I have an appointment with President Luis Echeverria of Mexico at Blair House at 9:00 a.m. on June 16.

Penneman then drove me back to the Los Alamos Inn where I spent some time reading the material I picked up during my visits this morning and preparing for my commencement address tonight.

Dr. and Mrs. Joseph M. Carroll, Superintendent, came by and drove me to the Los Alamos Country Club where I had dinner with a number of school officials and their wives. Included were the Carrolls; Dr. and Mrs. John F. Spalding, Board President; Dr. and Mrs. Peter G. Salgado, Board Vice President; Mr. and Mrs. George O. Bjarke, Board Member; Mr. and Mrs. Robert L. Loar, High School Principal; Mr. and Mrs. Denny Holder, High School Assistant Principal; Mr. and Mrs. William Valigura, High School Assistant Principal; Mr. and Mrs. Walter E. Smith, Assistant Superintendent; Dr. and Mrs. Duane W. Smith, Director of



Cindy Lindsay, GTS: June 1, 1972.

Los Alamos High School Commencement Exercises, Griffith Gymnasium.



Pupil Personnel; and Mr. and Mrs. Robert O. Eikleberry, Senior Class Sponsor. I sat at a head table with Dr. and Mrs. Carroll and Dr. and Mrs. Spalding. After dinner, I rode with the Carrolls to Griffith Gymnasium of Los Alamos High School where the 29th Annual Commencement exercises were to be held.

I was interviewed on my commencement address by Ken Evans of KOB-TV, Sante Fe, for showing at 6:00 p.m. tomorrow night. The gym was packed to capacity (about 2500 people) and there were 358 graduates, including Russell Alan Florin, the son of Al and Kay Florin. Student Peter Hammel introduced Superintendent Carroll, who introduced me. I gave my commencement address, "Youth of America." It was very well received. Susan Balog then introduced Principal Robert Loar and he and Dr. Spalding handed out, individually, the 358 diplomas.

I gave a copy of my address to a representative of the Los Alamos Monitor and to Martha Chabin of the Santa Fe New Mexican (who interviewed me briefly). A number of pictures were taken, including some with Cindy Lindsay, the winner of a trip to Stockholm to view the 1972 Nobel ceremony--a reward provided by Science Service in connection with the International Science Fair in New Orleans last month.

After the exercises, I met Marian Eudaley of South Gate, California (Pescadero Avenue) who knew my mother and father. I also met Al Florin and his daughter (a high school sophomore). The Carrolls drove me back to the Los Alamos Inn, where I again spent the night.

Friday, June 2, 1972 - Los Alamos

I had breakfast in the dining room of the Inn. Penneman then picked me up and drove me to the Administration Building for my colloquium talk on "The Superheavy Elements," illustrated with slides. Bob introduced me and a question period followed the talk. I met a number of my friends after the lecture.

I then rode with George Cowan to the Radiochemistry Building. Here the secretaries (including Bob Fowler's secretary of 13 years) had baked cookies in my honor. I met a number of members of the Radiochemistry Group, including Rene Prestwood, my Ph.D. student Don Barr, and Jerry Wilhelmy (Stan Thompson's man). Among the others I met were Kenneth Apt, John Balagna, Silvio Balestrini, Ernest Bryant, Gilbert Butler, William Daniels, George Ford, Gregg Giesler, James Gilmore, Genevieve Grisham, Paul Guthals, Jere Knight, Gordon Knobloch, Francine Lawrence, Harold O'Brien, Jr., Charles Orth, Jim Sattizahn, William Sedlacek, Theodore Shull, and Louise Smith. We had cookies and coffee or tea.

Cowan began a program of presentation by describing his program of looking for  $\text{Pu}^{244}$  possibly brought in to earth on microspheres when the earth passed through an interstellar cloud some 100 million years ago. They will look in phosphate ores. Jim Sattizahn then took charge and introduced Hal O'Brien who described the proposed radiochemistry program at LAMPF to produce a number of radioisotopes in quantity, including some of import in medicine (I-123 and Xe-127). Jere Knight described the work proposed at LAMPF on meson induced reactions as identified by radiochemical techniques.



Friday, June 2, 1972 (con't)

Bob Potter (of CNC-4) spoke next on the program of developing geothermal energy sources, a program he invented. They are proposing a heat recovery experiment from dry rock for the other side of Valle Grande, about 30 miles from Los Alamos, and are requesting supplemental funds for this. They would use hydraulic fracturing, inject cold water to the 300°C isotherm at a level of 7000-10,000 feet, then extract the steam out of a neighboring conduit. A more normal condition (say in the northeast) would be 170°C at about 6 km, going down to sedimentary rocks, covering areas of 300-400 square miles. More widely distributed granite rock regions, where radiogenic heat sources have been largely undisturbed, are apparently available. He is proposing that the AEC fund a nationwide program of heat flow measurements. For 300°C rock, he estimates 4.7 mills per KW hour, and for 175°C rock, 8.0 mills per KW hour. Use as heat energy, especially in the East, looks very interesting. Costs of 19¢ per million BTV are projected.

Potter has estimated the total resources as follows. For recovery covering half the United States with wells down to 20,000 feet, the electrical energy requirements of this country (as of the year 2000) can be met for 200-300 years. An additional kilometer of depth would increase the time by 500 years. The environmental aspects of subsidence and earthquake induction are somewhat serious aspects of this source of energy. The rock contracts after the removal of the heat, which leads to these problems; also, the lubrication of faults by the water leads to potential earthquake problems. Thermal pollution presents another problem--air heat exchanges are being considered to alleviate this.

After the briefing, I toured the Radiochemistry Building with Cowan, Sattizahn, Barr, and others. We saw the large number of elegant radiochemistry laboratories, the hot laboratories, the large instrumental area under the direction of John Balagna, the area where Darleane Hoffman and Francine Lawrence did their isolation of Pu-244 from bastnasite, and the mass separator under the direction of Gregory Kelley.

After this, I rode with Cowan (in his car), Sattizahn, and Barr to the Whiterock Pub in Whiterock for lunch with a group including most of those I met with this morning. After eating, I rode with the same three to the Overlook of the Rio Grande River as it passes through White Rock Canyon--a spectacular view. Rene Prestwood met us there. (He had earlier shown me his 1942 Berkeley lab notebook which he fortunately has preserved--he will send me a copy of this and two other 1942 notebooks.)

I then rode with Cowan to LAMPF where Louis Rosen gave me a briefing on the status of the Facility. They expect the first beam before July 4, the original target date. The beam may be attained as early as next Monday and Louis said he would call me as soon as it is seen. The Facility accelerates 900 microamperes positive hydrogen nuclei and 100 microamperes negative hydrogen atoms simultaneously, as well as one microampere of polarized beams. Louis gave me much credit for securing the funding of the machine for them. I suggested they



invite Lyndon B. Johnson to the dedication of the Facility after checking to be sure it is okay with the Nixon administration. Louis took me on a complete tour of the Facility--people are quite excited about looking for a beam within a few days. It appears my visit was extremely well timed. I met Tom Putnam during the tour; he is in charge of Safety at the Facility.

Rosen then drove me to the Administration Building, where I met with Harold Agnew in his office, joined by Richard Taschek. Harold said he hopes to turn Los Alamos into a Science City. He is a little miffed at recent attempts by Livermore Lab people to steal a number of Los Alamos biomedical people--Edgar Mendelsohn, who is heading the program at Livermore, has contacted a number of scientists here. Apparently, Jack Gofman left the Livermore Bio-Med program in bad shape and it needs to be built back up.

Harold drove me to the Los Alamos Inn where I prepared for the following reception and dinner. I rode in a lab taxi to the Science Museum to attend a reception in my honor in the Red Room. Among those present were R. E. Schreiber, D. P. MacDougall, R. F. Taschek, Mr. and Mrs. J. H. Manley, D. B. Hall, Mr. and Mrs. R. B. Lazarus, R. D. Baker, Mr. and Mrs. George Cowan, Mr. and Mrs. William Briscoe, Mr. and Mrs. Eugene H. Eyster, George L. Voelz, Mr. and Mrs. William E. Ogle, Mr. and Mrs. Keith Boyer, Mr. and Mrs. Louis Rosen, Henry T. Motz, J. Carson Mark, Mr. and Mrs. Robert N. Thorn, Robert G. Shreffler, Larry and Marge Asprey, Al and Kay Florin, Hunter H. Hill, Mr. and Mrs. T. W. Newton, M. H. Treiman, Mr. and Mrs. L. H. Jones, Mr. and Mrs. J. B. Mann, Mr. and Mrs. W. H. Zachariasen, Mr. and Mrs. D. T. Cromer, Norris and Lois Bradbury, Mr. and Mrs. J. R. Nix, Mr. and Mrs. P. A. Seeger, L. O. and Betty Morgan, Mr. and Mrs. James E. Sattizahn, and Mr. and Mrs. N. A. Matwiyoff, in addition to Harold and Mrs. Agnew.

After the reception, I rode with the Cowans to the Agnew residence for dinner. Present were the Cowans, Rosens, Florins, Nixes, Zachariasens, Bradburys, and Sattizahns. I talked with Kay Florin about my project to write the history of my Met-Lab Chemistry Section C-1. I rode back to the Inn with the Cowans.

Saturday, June 3, 1972 - Los Alamos - Lafayette

I had breakfast in the Inn restaurant with Joe Carroll, after which he drove me to the Albuquerque Airport. I gave him an autographed copy of Man and Atom. I bought a number of copper trinkets at the airport. I talked to James Lilienthal of Los Alamos Lab and incoming president of the American Nuclear Society. He was there to put his 12-year-old daughter Ann on the plane. She sat next to me on Continental Airlines Flight No. 93 which left at 10:15 a.m. and arrived at San Francisco Airport at 11:10 a.m. Helen drove me home.

I read letters, papers, and journals that had accumulated during my absence. Eric, Suki and I took a hike in Briones Regional Park. It was a lovely day with the temperature in the low 80's. We hiked the middle high trail and came back to our starting point via one of the roads. Eric received a letter from Harvard today informing him that he was not chosen for admittance from the waiting list.

Sunday, June 4, 1972 - Lafayette

In the afternoon, Joyce Burr and Alice Howard came out to the house to talk about the meeting of the East Bay Regional Park District Board of Directors on Tuesday afternoon. I am going to act as chairman and spokesman for CUWA to present the case for the purchase by the District of the Huckleberry area as a botanical preserve. They briefed me on the background of this project.

Eric, Suki and I took a hike in Briones; we hiked up the hill starting at Homestead Valley and came back by way of Crescent Ridge. Steve called from Davis to tell us that the judge, on the basis of three alternatives, sentenced him to two days of constructive work on a bicycle trail (the other alternatives were two days in jail or a \$45 fine).

Monday, June 5, 1972 - Berkeley

A political advertisement appeared in this morning's San Francisco Chronicle, sponsored by Californians Against the Pollution Initiative (Proposition 9) which will appear on tomorrow's ballot. My name was listed as a scientist/educator against the proposition. This was done without any contact with me or authorization from me.

I attended Professor Markowitz's lecture at 9:10 a.m. and held my office hour in Latimer Hall at 11:00 a.m. I had lunch in the Faculty Club with the Chem Department faculty, after which I met with my Chem 1C section in Room C. This was my last meeting with this section. The students filled out forms rating Markowitz, Andy Friedman, and me; this also took place in Room E where the students rated Markowitz, Dana Drath, and me (samples attached).

I walked back up to my office and met with Earl Hyde for two hours to decide on the raises we will recommend for all members of the Nuclear Chemistry Division for fiscal year 1973. Bill Glenn dropped by in the late afternoon. He obtained his Ph.D. here in a joint Department of Electrical Engineering-Nuclear Chemistry Division effort in 1952. He is now Director of the Research Laboratory of CBS at Stamford, Connecticut.

Eric, Suki and I took a hike to the water tank. Bessie, Lynne and Bill's dog, gave birth to five puppies this afternoon; Dianne and Eric got there in time to see the last one being born.

Tuesday, June 6, 1972 - Berkeley - Oakland

Don Stewart phoned me from Argonne. He is putting into the ANL conference room photographs of all the Chemistry Division Directors and asked if I could provide the exact dates of the terms of office of the early ones.

From 12:15-1:00 p.m., I attended the luncheon of the Energy and Resources Group. Among those present were Charles Birdsall, Chairman, Todd La Porte, Dan Luten, Kai Lee, Bill Chinowsky, and Gene Rochlin. We discussed further the plans for the ERG group.

## SAMPLE RATINGS: CHEMISTRY 1C LABS

Question: "What are the strong points of the instructor?"

"Well prepared, good explanations, willing to help students. A fatherly (or grandfatherly) figure. We are honored to have him as our lab prof."

"Seemed to be a person you could get along with well. Willing to help."

"Explains things excellently. Attends lectures and gives relevant lectures. Goes over quiz questions so you understand them right after you take it. The best lab prof I've ever had."

"Chairman of the A.E.C., Nobel prize winner."

"Patient, willing to help..."

"Good lectures in the lab discussions, tells us more than we need to know"

"Very personable, concentrated directly on the problems of the class."

"Really knows his stuff." (Weak points: "Knows too much. Intimidating.")

"Extremely well prepared, Extremely willing to help students." (Weak points: His heart: helps students too much--not enough time for his own stuff.")

"He's smart." (Weak points: "He's too smart.")

"Strong ability and desire to get students to understand principles presented in lecture. Doesn't deviate to irrelevant topics, spends ample time on topics of importance."

"Knows his subject, takes an interest in the students." (Weak points: "too abstract in his discussions, introduces irrelevant material.")

"GREAT PROF--if I could get another class from him I would take it."

"As usually, the professor is willing to help and to answer all questions in a clear and understandable way. He made himself quite available to students." (Weak points: "There were no weak points.")

"Best room prof I've had--explains everything you ask; helpful, generous with his time and help." (Weak points: "None.")

"I wish that Prof. Seaborg could have taught the main course--the times he spent in lab were very valuable. Prof. Seaborg explains very well without overwhelming people with details that are quite superficial out of context. Prof. Seaborg would do a lot for people just beginning in chemistry."

Tuesday, June 6, 1972 (con't)

At 2:00 p.m., I went to the East Bay Regional Park District headquarters on Redwood Road in Oakland to attend the scheduled meeting of the Board of Directors of the EBRPD. The Board members present were Fred Blumberg, President, Paul Harberts, Howard Cogswell, Clyde Woolridge, and John McDonald. They went through the regular agenda items. When they came to that concerning the Huckleberry Trail, Howard Cogswell (as a member of the Huckleberry Trail Citizens' Advisory Committee) made a presentation of the Committee's report recommending acquisition of the area, including the 50-foot trail areas connecting with Sibley Park and Redwood Park and an additional 150 acres of hillside facing the area. He made this presentation with the help of Marian Reeve, who showed about 20 slides of the area. Following this, there was a little discussion by the Board members which included the suggestion that the area be purchased from the recent grant to the University of California by the Rockefeller Foundation for the support of botanic projects. A representative from the Chancellor's office responded that this would not be possible as the funds were already completely committed.

Then, in response to President Blumberg's call for discussion from the audience, I gave my presentation. I began with a little reference to my stay in Washington and my pleasant surprise upon my return to find the greatly expanded Regional Park District. I said that I was a hiker and enjoyed the new parks, especially Briones, and described how my interests then went beyond this to involvement with the Contra Costa Park Council and then, through Leo Brewer, with the Huckleberry Trail area. I said that I was speaking as chairman of and spokesman for the Citizens for Urban Wilderness Areas in the matter of the Huckleberry Botanic Preserve proposal and named all of the organizations that we are representing (as listed in the attached copy of the remarks).

In the course of my presentation I introduced Lucretia Edwards who gave huckleberry tarts--which had been made from huckleberries picked on the trail--to all of the Board members and some staff members present; this was very well received. I then went on to speak about the need for quick action in order to prevent further bulldozing, indicated that I thought the money was available and that both the Huckleberry Trail area (50 acres) and the additional hillside area (150 acres) be acquired, the first as soon as possible, and suggested that there be a second trail for horses at the bottom of the hillside.

After my presentation, the Board went into executive session. When it came back, a motion was made that the Huckleberry Trail area be acquired by condemnation proceedings and that the 50-foot trail areas north and south connecting with Sibley and Redwood Regional Parks also be acquired. This motion carried unanimously. A second motion was made suggesting that the additional hillside area be considered later as part of the park Master Plan to be developed by Overview (Stewart Udall's organization). This motion also carried unanimously. After the meeting, Frederick J. Monteagle, Public Information Associate of the East Bay Regional Park District, asked for a copy of my remarks, which I left with him.

Remarks by  
Dr. Glenn T. Seaborg  
to the  
Board of Directors  
of the East Bay Regional Park District  
Oakland, California  
June 6, 1972

I am here today as chairman of and spokesman for the Citizens for Urban Wilderness Areas in the matter of the Huckleberry Botanic Preserve proposal. CUWA includes representatives from

San Francisco Bay Chapter of the Sierra Club  
Golden Gate Audubon Society  
Associated Sportsmen  
People for Open Space  
Nature Conservancy  
Regional Parks Association  
California Native Plant Society  
West Contra Costa Conservation League  
National Herb Society  
Berkeley Garden Club  
Businessmen's Garden Club of Oakland  
Small Wilderness Areas Preservation Association  
Oakland-Piedmont American Association of  
University Women  
California Botanical Society  
Association for Outdoor Education  
Central California Science Council  
Berkeley Ecology Center  
Merritt College Biology Department  
Diablo Valley College Life Sciences Department  
Contra Costa College Biology Department  
Laney College Biology Department  
Mills College Biology Department  
Grove Street College Biology Department  
University of California Botany Department  
California Natural Areas Coordinating Council  
Shoreline Parks Committee  
Contra Costa Park Council  
Point Pinole Committee

Other organizations have expressed interest in our purpose and may be expected to join shortly.

At this time I should like to introduce Mrs. Thomas Edwards of the Shoreline Parks Committee, who would like to make a short presentation.

Citizens for Urban Wilderness Areas would like first of all to compliment you upon the excellent report developed by your staff in collaboration with citizen members of the Huckleberry Trail Advisory Committee. We are in complete agreement with its recommendations. It contains a fine statement of the value of the hillside, to which we do not propose to add.

We do have some additional points to make that will take only a few moments. Dr. Cogswell would like to show about twenty slides, with the Board's permission.

The Committee has recommended acquisition of the entire Huckleberry Trail Company property as well as the entire hillside as rapidly as possible. CUWA would like to emphasize that prevention of disasters like the abortive bulldozing of mid-February calls for celerity of action. Past District statements to interested citizens concerning this project were outlined in your Committee's report. Though these statements were not made by either present staff or present Board, CUWA hopes you will consider them, along with the important time factor, as you determine your present course of action. We feel that it is essential to avoid the delay that would attend a referral to the Master Plan Committee, which is not yet even in existence.

We believe that the District has money to begin ~~this~~ project now--that is, to purchase the Huckleberry Trail Company property. There have been suggestions that expending any funds in this manner would change the project from a "new" one capable of utilizing new tax funds to an "old" one not eligible for such funds. The legislation itself, however, specifies only that the funds be used for "new park lands." Hopefully there should be no reason for ~~thinking~~ that purchase of the Huckleberry Trail Company property now will prevent additional land purchase of the remainder of the hillside in the future--with either new or old tax money. Since the first 5¢ of the new tax money is not subject to development of a Master Plan, it should be possible to commence this project now.

Another point we should like to mention briefly is the equestrian trail. We feel strongly that the hillside crossed by Huckleberry Trail is not the place for an equestrian or bicycle connecting link between Redwood and Sibley Parks. This hillside should be reserved for nature study and enjoyment. Construction of a second trail through the Huckleberry Trail Company property would only cause additional disruption of the plant communities and would introduce weeds along a second corridor. Acquisition of sufficient acreage should make feasible a rerouting of the connecting trail across a less fragile area than the biologically important east-facing slope. We suggest, for example, that the route of the Old Thorn Road that formerly took Oakland traffic from the notch at the north end of Huckleberry Trail down into the canyon bottom toward Moraga might be used. This roadbed still exists much of the way and, in its upper stretch, is utilized for a short way by the District's planned trail. It passes through lovely scenery--we have a slide to show later--and the presence of the headwaters of San Leandro Creek makes for the possibility of watering horses. The old Sacramento-Northern right-of-way in the canyon also suggests further trail-linking possibilities. We again call to the Board's attention that the Sierra Club offered in 1970 to do necessary trail work by hand to minimize adverse effects.

Everybody was very pleased and many felt that my role in the affair had been decisive. The matter has been under consideration for ten years with a continuing lack of success until today in getting a resolution of the problem.

I voted in the primary election at the polling station on Monticello Road, then continued on with Eric and Suki on a hike to the water tank. Helen and I, along with Eric and Dianne, had a quiet 30th wedding anniversary dinner in our patio. I gave her a gold pin with a pearl, the symbol of this anniversary, and she gave me a table tennis set, pending arrival of an autographed copy of Mary Bowerman's book on the flora of Mount Diablo which she had ordered.

Wednesday, June 7, 1972 - Berkeley

This morning we learned the results of yesterday's primary elections in California. George McGovern defeated Hubert Humphrey by about a 5% margin for California's electoral votes at the Democratic Convention in the presidential race. Fortney Stark, a banker in Walnut Creek, upset George Miller, the incumbent of 28 years, for the Democratic nomination in that Congressional race. Proposition 9, the "Clean Environment Initiative" that would have placed a five-year moratorium on the construction of nuclear power plants, lost by a 2-to-1 margin.

A crisis occurred in the California elections when a San Francisco lawyer, Frederick Furth, secured a Federal Court order that the San Francisco polls stay open until 11:00 p.m. to enable all eligible voters to cast their ballots. San Francisco had the longest ballot in its history and had eliminated some 30 voting stations to consolidate everything on machines, which couldn't handle the volume. Secretary of State Edward J. Brown, Jr., thereupon invoked a statute of the California voting code that no ballots in the entire state could be counted until all of the polls were closed. Accordingly, no news media could report or predict on the outcome of the election until 11:00 p.m. last night.

At 9:10 a.m., I attended Professor Markowitz's Chem 1C main lecture in the Physical Sciences Lecture Hall. On this, his last lecture to the Monday-Wednesday section, he ended with a call to support freedom of learning in the University.

I had lunch in my office on the hill, then went back down to the campus to teach my Chem 1C section in Room E. This was a review session, after which I helped Dana Drath check out the students' lockers as a termination to the laboratory part of the course.

At 4:00 p.m., Dr. George H. Milly, President of GEOMET, Inc. in Washington, came to see me. He described the GEOMET company, which was founded on the basis of his ideas as a company to carry on work in the interest of society in the fields of environment, civil problems related to the public welfare, peace and disarmament, and so forth. He would like to have me affiliate myself with GEOMET in some fashion, such as on a technical advisory board or other consultant capacity, membership on the Board of Directors of the parent GEOMET Corporation, or on the Board of Directors of GEOMET Mining and Exploration, Inc.,



which is successfully using a new method for uranium exploration. We agreed that he would send me more information and that I would consider it further. On the way home, I dropped him off at the home of Gene Reid (a chemist of Chevron Research whom I have known since the 1930's) in Orinda; apparently, Milly and Reid are friends of long standing as well.

I took a hike with Eric and Suki to the water tank. Lynne and Bill came by for dinner and spent the evening. Bill had finished his final exams at Cal State Hayward.

Thursday, June 8, 1972 - Berkeley

I wrote Howard Vesper at the AEC in favor of the nomination of Kasimir Fajans for the Enrico Fermi Award (copy attached).

Dick Frankel came to my office at 11:30 a.m. to discuss the status of affairs at Kevex and particularly our plans for the issuance of the annual report. He described the projected new products and projected rate of growth. We continued through lunch in the cafeteria. I told him about my meeting yesterday with George Milly. Dick expressed some interest in learning more about GEOMET in the off chance that there might be some possibility of affiliation between Kevex and GEOMET. I gave him GEOMET's address in Rockville, MD.

Eric, Suki and I took a hike to the water tank. Eric attended a yearbook-signing party at school.

Helen and I attended the retirement dinner for Emilio Segre at H's Lordships Restaurant on the Berkeley marina. We dropped Dianne off at Lynne and Bill's on the way so she could visit with them and Bessie's five puppies during the evening. There was a large crowd at the reception and dinner. We talked to Emilio and Rosa, to his son Claudio (who is on the History faculty at the University of Texas in Austin) and his wife, and to his daughter Fausta. Helen and I sat at a table with Iz and Lee Perlman and with Jackson and Barbara Laslett.

George Trilling was the Master of Ceremonies, and he called on Carl Helmholz, Owen Chamberlain, and Burton Moyer to talk about Emilio as a scientist and human being. Vice Chancellor Mark Christensen also made some laudatory remarks and presented Emilio with the Berkeley Citation. Trilling presented him with a large book on mushrooms (his specialty) and a fishing outfit. Emilio responded with some moving remarks, thanking those who had arranged the dinner, many of his colleagues at Berkeley and elsewhere, and his family for their prominent role in helping him in his career. It was a charming speech in the typical Emilio manner.

Friday, June 9, 1972 - Berkeley

Louis Rosen called me from LAMPF at Los Alamos to say that at 12:08 this morning they got 800 MeV protons with a low intensity--10's of nanoamperes. He said that the machine has behaved beautifully; they started to look for a beam at midnight on Sunday. He said that they wanted me to know how much they credited me with this accomplishment.

Berkeley  
XXXXXXXX

June 8, 1972

Mr. Howard G. Vesper, Chairman  
General Advisory Committee  
U.S. Atomic Energy Commission  
Washington, D.C. 20545

Dear Howard:

I am writing in support of Max A. Bredig's nomination of Kasimir Fajans for the Enrico Fermi Award.

I first met Dr. Fajans about 30 years ago and have been in touch with him ever since. He is the last surviving Giant of the early period of radioactivity and nuclear structure, and each of my conversations with him has been a source of inspiration.

Dr. Fajans made a number of important discoveries and in a number of instances has not received his due amount of credit. He and his student Oswald H. Göhring were the real discoverers of the element with the atomic number 91 in 1913. They discovered the short-lived isotope uranium-X<sub>2</sub> (1.15 min. half life), and this work was overshadowed by the discovery of the long-lived Pa<sup>231</sup> by Hahn and Meitner in 1918.

He also discovered the radioactive displacement laws at the same time as Soddy. He apparently also understood the concept of isotopes at about the same time as Soddy although Soddy is generally credited with the discovery of this concept and coined the name "isotope."

Dr. Fajans also was the originator of the precipitation rules for the carrying of radioactive substances by precipitates, independently of Hahn, a very important development in the early days of radioactivity.

In addition he has made a number of important contributions in the theory of chemical binding which are still

Mr. Howard G. Vesper

- 2 -

June 8, 1972

valuable today, and he was an original contributor to the concept of the Born-Haber cycle so useful in calculating chemical thermodynamic properties. Although his contributions were simultaneous and independent of those of Born and Haber, he has never received his share of the credit for this important development.

All in all, I believe that it would be most appropriate to give the Fermi Award to this early Giant in the field of radioactivity and nuclear and atomic structure.

Sincerely yours,

Glenn T. Seaborg

GTS/ssk

Friday, June 9, 1972 (con't)

I called Joe Katz, told him of my visit to Los Alamos last week, and that I was very encouraged about our progress on the revision of the book.

From 12:00-1:15 p.m., the Program Committee of the Nuclear Chemistry Division held its regular bag-lunch meeting in my office. Present were Cerny, Edelstein, Ghiorso, Harvey, Hollander, Hyde, Perlman, Poskanzer, Shirley, Street, Templeton, and Thompson. I opened the meeting with a report of Louis Rosen's call. I told Jack Hollander of my conversation with John Ryan, in which I had asked him to arrange meetings for Jack with Bob Hollingsworth and, if possible, Jim Schlesinger. Jack said he will call Ryan to follow this up. Ken Street led a brief discussion about the budget and our options for using up the balance by the end of this fiscal year. Where the final adjustments must be made is still a matter of educated guess-work.

Earl presented a detailed report of the meeting of Chemistry Division Directors held at the AEC in Washington on June 7-8. He urged that a 1-2 page statement on the SuperHILAC budget needs to be sent to Van Dyken--noting, for example, that a nationwide users group is waiting for access to the SuperHILAC but that we don't have enough money to make it ready. He further urged that we send memoranda from time to time to Van Dyken on any program results in which we can show the dollar payoff, e.g., x-ray fluorescence technique.

Al Ghiorso gave a status report on the SuperHILAC, suggesting that the drift tubes and post-stripper may need realigning immediately after the shutdown period. It was agreed that a newsletter should go to the outside users towards the end of June.

I called Bob Penneman at Los Alamos to tell him how pleased I am with the way the book revision is getting under way and that I had reviewed it with Joe Katz. We discussed the emphases of our book as compared with Cornelius Keller's. We agreed that the thought that we should emphasize the points in which Keller is weak is a good one; however, ours should be a complete coverage, but with different emphases.

At 2:00 p.m., I hosted a party at the SuperHILAC. Various punches and foods were served. Al Ghiorso called everyone together for brief remarks by several persons. Chief Engineer Birt Kortegaard spoke of his great pride in working with this team. Ken Mirk gave a humorous and enlightening narration to a film they had prepared on the operation of the SuperHILAC. Ed McMillan spoke informally and analogized the evolution of the SuperHILAC as a metamorphosis (caterpillar to butterfly) instead of the "new creature" that was projected in the early planning days. Ed Lofgren also talked briefly.

Before calling me to the microphone, Ghiorso read the letter I had sent him on May 1, 1964, which, he says, initiated the idea in his head to build a new heavy ion accelerator. I made some informal remarks, largely in response to the speakers who preceded me. I reassured everyone, on the basis of my own experience with migraine headaches, that Bob Main (who couldn't attend due to one) could look

forward to their eventual subsiding, due to old age. I commended Birt Kortegaard and his team on their superb effort and Ken Mirk on his hidden talents as a comic. I thanked Ed McMillan on behalf of all of us for the biology lesson, repeating an observation about Ed that I have made before--that he is amazingly well versed in a wide range of scientific disciplines. Following up Ghiorso's recounting of the 1964 letter, I expanded on the historical background that brought us to this point today in the development of the SuperHILAC. I noted that even if the long-range goal of reaching the elements at the "island of stability" and beyond isn't reached, each of the next stages in the SuperHILAC's operation will be a major milestone in nuclear research. After talking with numerous others on the SuperHILAC team, I returned to my LBL office.

Suki and I took a hike to the water tank.

Saturday, June 10, 1972 - Lafayette

In the morning, Eric and I went to the Sun Valley Lumber Company to buy plywood and other lumber to be used for the repair of our tennis court gate and backboard. In the afternoon, we and Suki took a hike in Briones. We hiked the trail up the hill which starts at the end of the road which goes into the park and returned via the old Briones Valley Road.

Helen and I attended a reception and dinner at the home of the Ed McMillans in honor of Bob and Betty Thornton. Bob is retiring at the end of this month. Carl Helmholz, Don Cooksey, Melvin Calvin, Wally Reynolds, Molly Lawrence, Jim Born, Betty Helmholz, Emilio Segre, Ed McMillan, Jimmy Vale, and I gave short remarks near the end of the dinner, in recollection of Bob's life and achievements and to wish Bob and Betty the best for the future. McMillan presented them with a large silver punch bowl and ladle on behalf of those present. Bob made a short and moving response of thanks and appreciation. Also present were the Ed Lofgrens, William Brobecks, David Judds, Dick Connells, Elmer Kellys, George Pappases, Peggy Thornton, and Bill Douglass and his friend Judy Raubenheimer (daughter of Albert C. "Raubie" Raubenheimer, longtime president of USC and an old friend of mine; she is now in television and movies--one film, "The Choice is Yours," is to appear sometime soon on TV Channel 2, and she is also in the new film with Robert Redford, "The Candidate").

Sunday, June 11, 1972 - Lafayette

I read some journals in the morning and early afternoon. In the middle of the afternoon, Lynne, Bill, Eric, Suki and I took a six-mile hike in Briones. We started where Eric and I started yesterday, hiked along the middle trail up the hill and continued in to the north edge of the park, then returned along the old Briones Valley Road. Lynne and Bill had dinner with us. They left early because Lynne had to attend a meeting of her Women's Lib group.

After dinner, Dianne, Helen, and I went to a traveling (Butler) carnival stationed at Deer Hill and Oak Hill Roads. I rode the ferris wheel with Dianne and Helen rode the whip with her. She won some prizes at some of the shooting games, etc. that she played. We met

Mr. Kelleher of Bechtel Corporation, recently moved from the Gaithersburg to the San Francisco office. We also talked to our next-door neighbor Catherine Sherman and her brother-in-law Jake Sherman.

Dr. Kasimir Fajans called from San Francisco where he is visiting his friends the L. Rosenmans; our schedules make it appear impossible to get together.

Monday, June 12, 1972 - Berkeley

Jan-olov "Jol" Liljenzin, who is going to work with me as a postdoctorate in the superheavy elements, arrived to start work today. He had driven across the United States with his family after arriving from Sweden a couple weeks ago. I took him up to the HILAC Building to meet Ghiorso, Main, the Alonsos, the Eskolas, the machine operators, etc. I showed him his office and laboratory (Room 203, Building 70), introduced him to Jim Harris, and we called Bob Silva at Oak Ridge to discuss the status of the work he has started which Liljenzin will continue.

I had lunch at a table outside the cafeteria, overlooking the campus, with Liljenzin, Harris, and Hyde; we also visited with Ron McFarlane (visiting the Lab today), Markowitz, and others at a neighboring table.

I called Wally Costa at his office in San Francisco to discuss progress in acquiring hiking rights to Lafayette Ridge. He is very interested and has been working with Hulet Hornbeck and a number of the owners and with Dana Murdock--an attorney who represents Ed Sessions, one of the owners of the land involved. Wally said he is working on acquiring the hiking rights to a huge circle which would go along Lafayette Ridge from Briones Regional Park on along Deer Hill Road and Brown Avenue to the Sacramento-Northern right-of-way in one direction, and across Happy Valley Road to the Lafayette Reservoir peripheral hiking trail and on across to the Sacramento-Northern right-of-way in the other direction--thus closing the circle. He feels that it will be possible to get hiking rights to a good portion of this by the end of the year. He is going to get together with me within a couple of weeks and possibly ask me to participate in some meetings with Hornbeck in this connection.

Eric, Suki and I took a hike to the water tank.

Tuesday, June 13, 1972 - Berkeley

I met in the HILAC Building conference room with Ghiorso, Nurmia, Nitschke, the Eskolas, and the Alonsos from 9:00-10:30 a.m. This was the first of a series of planning meetings concerning the research program for the SuperHILAC. We discussed the immediate experiments for testing SASSY by using argon ions and, if possible, recoil gold ions produced by collisions with argon ions. We discussed a possible acronym for the chemists representing the five cooperating laboratories working on the chemical identification of the superheavy elements and came up with the "Superheavy Elements Inter-Laboratory Khemists" (SHEIKS). We also decided that a good name for the region characterized by 152 neutrons and atomic numbers just beyond number 105 might

be "Superheavy Elements Peninsula," as contrasted with the region around element 114 which had become known as the Superheavy Elements Island.

I wrote to Gunter Herrmann that we are delighted that Jens Kratz will be arriving next week and to Russell D. Niles, Director of the Hall of Fame for Great Americans, that I would be happy to accept my reelection as a member of the College of Electors of the Hall (copy of incoming letter attached). I also wrote a letter to Ed David, Science Advisor to the President, in response to his request for my observations on cooperative work with the Soviet Union, in preparation for the establishment of the US/USSR Joint Commission on Cooperation in Science and Technology (copy attached).

Sheila fielded a call from Jesse Mock of Electrical Week magazine. He wanted to know if I have been approached to become the Director of the Electric Power Research Institute. When told no, he asked that I call him if I am approached.



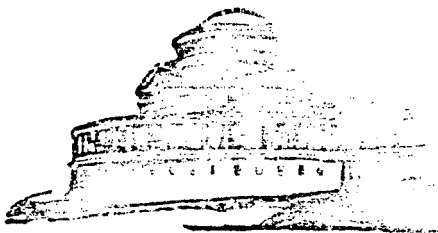
GTS, Kasimir Fajans: 6/13/72.

At 12:30 p.m., Amos Newton brought Kasimir Fajans by my office where Earl Hyde and I were waiting for him. We had a very interesting discussion of the early days of radioactivity. He was particularly interested in getting a clarification of the history of the precipitation laws, a matter on which we had corresponded. We then went to the cafeteria where the four of us had lunch and continued discussion. After lunch, I had my picture taken with Fajans in the area outside the cafeteria (by Doug McWilliams of the LBL Technical Information Office). Fajans, Newton, and I then returned to my office to continue the discussion. Some more pictures were taken here, and most importantly, we tape recorded this discussion which lasted almost an hour, thus recording many of Fajans' priceless recollections of the early days of radioactivity and his remembrances of many of the scientific giants of yesteryear. I gave him a copies of Man and Atom and Nuclear



Dr. Kasimir Fajans at LBL: June 13, 1972.





THE HALL OF FAME FOR GREAT AMERICANS

AT NEW YORK UNIVERSITY

Executive Offices: 1009 Fifth Avenue • New York, N.Y. 10028

Telephone: 861-2175

RUSSELL DENISON NILES

Director

FREDA T. HLIDDAL

Curator

June 9, 1972

1538 6/10/72  
2000

My dear Dr. Seaborg:

It gives me pleasure to advise you that the Senate of New York University, at its meeting on May 11th, unanimously reelected you a member of the College of Electors of The Hall of Fame for Great Americans for the next Election which is to be held in 1973.

We are enclosing a copy of the latest revisions to the Constitution and Rules for Election of the Hall of Fame which were unanimously approved by the members of the Senate at their April meeting.

It is a source of gratification to us that you have served the University in this capacity, and I sincerely hope that we may count on your acceptance at this time. I hope you have found satisfaction in the thought that you are helping to mark for posterity those who merit America's highest acclaim.

For the record, we are listing you as an Elector from the District of Columbia. A copy of this list will be sent to you early in January, 1973.

Most sincerely,

*Russell D. Niles*  
Russell D. Niles

Dr. Glenn T. Seaborg  
Lawrence Radiation Laboratory  
University of California  
Berkeley, California 94720

CONSTITUTION

Adopted 1900: Amended 1904, 1914, 1920, 1922, 1944, 1945, 1968

- ONE The Senate of New York University shall appoint the Electors of the Hall of Fame, shall conduct the elections, and shall be empowered to make and amend the Rules for Elections, subject to the Conditions of the Gift and to this Constitution.
- TWO The Electors of the Hall of Fame shall consist of approximately one hundred persons appointed for a six-year term. In the appointments, due recognition shall be given to geographical distribution and vocational classification.
- THREE Elections to the Hall of Fame shall be held every five years until 1970, and thereafter every three years.
- FOUR Panels for bronze tablets in "The Hall of Fame for Great Americans" shall be filled as follows: Fifty names may be inscribed in 1900, provided fifty shall be approved in accordance with the Constitution and Rules for Elections. At the close of every five years thereafter, until 1970, five additional names may be inscribed, and thereafter, at the close of every three years, three additional names may be inscribed.
- FIVE Should the full number thus authorized not be inscribed at any election, the Senate may approve the choice of more than the specified number at any succeeding election, provided those so elected in addition to those previously chosen shall not exceed the cumulative total which Rule Four makes possible at the completion of each election.
- SIX Election to the Hall of Fame shall require an affirmative vote of a majority of the entire body of Electors.
- SEVEN ~~The Senate of New York University, acting by a majority of its voting members, shall have the power to disapprove the choice of any name.~~
- EIGHT  
SEVEN No name may be inscribed except of a person whose home was in the United States and who has been deceased at least twenty-five years.
- NINE  
EIGHT The Senate COMMITTEE shall determine an appropriate classification of citizens by vocation or achievement, and shall assign each name chosen for inscription in the Hall of Fame to its proper class.

(Final corrections)

## RULES FOR ELECTION

- ONE The Electors of the Hall of Fame, consisting of approximately one hundred persons, shall be appointed by the Senate of New York University, in approximately equal numbers, from the following seven groups of citizens, and shall be so classified: 1) ~~Actual-or-former-University-or-College-Executives~~ UNIVERSITY ADMINISTRATORS; 2) ~~Historians-or-Professors-of-History-or-Literature~~ HISTORIANS AND PROFESSORS OF THE LIBERAL ARTS; 3) Scientists, AND ENGINEERS; 4) Authors, Editors and Artists; 5) ~~Men-and-Women-of-Affairs~~ PERSONS IN PUBLIC LIFE; 6) ~~Actual-or-former-High-Public-Officials~~, 7) ~~Actual-or-former-Justices,-National-or-State~~, 6) JUSTICES OF FEDERAL AND STATE COURTS; 7) BUSINESS EXECUTIVES.
- TWO Every State ~~or-groups-of-adjacent-States-having-approximately-one-million-inhabitants~~ shall be given REPRESENTED BY AT LEAST one Elector. No persons connected with New York University shall be eligible as an Elector.
- THREE The Director of the Hall of Fame shall invite the public to submit names to be considered by the duly constituted authorities for commemoration in the Hall of Fame. Such names may be presented from April 1 preceding the election to April 1 of the election year. Such nominations from the general public must be submitted on forms obtainable from the office of the Director.
- FOUR All names received from the public shall be placed before the Senate of New York University, and every name seconded by a member of the Senate shall be placed upon a preliminary list of nominations which shall be sent on April 15 of the election year to the Committee on Nominations provided for in Section Six.
- FIVE The Senate COMMITTEE shall assign each name upon the preliminary list of nominations to one of the following sixteen classes:
- 1) Authors (Editors, Poets, Novelists, Philosophers, Economists, etc.).
  - 2) Educators.
  - 3) Preachers, Theologians.
  - 4) Humanitarians. ~~Reformers~~
  - 5) Scientists.
  - 6) Engineers, Architects.
  - 7) Physicians, Surgeons.
  - 8) Inventors.
  - 9) Missionaries, Explorers.
  - 10) The Military.
  - 11) Lawyers, Judges.
  - 12) Statesmen.
  - 13) Business Men, EXECUTIVES. ~~Philanthropists~~
  - 14) Artists (Musicians, Painters, Sculptors, Actors, etc.).
  - 15) ~~Naturalists~~, PHILANTHROPISTS.
  - 16) ~~Men-and-Women-outside-the-foregoing-classes~~, ADDITIONAL CATEGORIES NOT CITED ABOVE.

## 2-RULES FOR ELECTION

- SIX A Committee on Nominations consisting of three Electors from each of the divisions of Electors provided for in Section One shall be designated by the Senate COMMITTEE. To this Committee of Twenty-one shall be submitted all names upon the preliminary list of nominations on or about April 15.
- SEVEN The Committee on Nominations shall be requested to canvass this preliminary list and to indicate for their colleagues on the Electoral College those names which are deemed worthy of special consideration. This list is to be returned to the Director of the Hall of Fame not later than May 10 of the election year.
- EIGHT All names which have been placed in nomination shall be placed upon the final ballot, with the votes of the members of the Committee on Nominations indicated thereon. Also, all candidates presented in a previous election who have received twenty or more votes shall automatically become eligible for consideration at the next election.
- NINE The final ballot, containing the list of nominations for the election, shall be sent to each Elector on or about June 1 of the election year.
- TEN Each Elector shall be requested to mark, sign and mail THE FINAL BALLOT to the Director of the Hall of Fame ~~the final ballot~~ by October 1, following. ~~Each name judged worthy to be inscribed in the Hall of Fame shall be marked thus-(x), before the name.~~ When an Elector fails to submit a ballot, this failure is regarded as a resignation from the College of Electors.
- ~~ELEVEN Votes must be received before October 15.~~
- ~~TWELVE~~  
ELEVEN Elections to the Hall of Fame shall require an affirmative vote of a majority of the entire body of Electors.
- ~~THIRTEEN Each name thus approved will be inscribed in the Hall of Fame unless disapproved before November 1 by a majority of the voting members of the Senate.~~
- TWELVE Announcement of the results of the names to be inscribed shall be made on November 1.

Berkeley  
xxxxxx

June 13, 1972

Mr. Edward E. David, Jr.  
Science Adviser to the President  
The White House  
Washington, D. C. 20500

Dear Ed:

I am very pleased that a US-USSR Joint Commission on Scientific and Technical Cooperation is to be established as a result of the summit meetings in Moscow last month. I am sorry that my schedule doesn't permit me to attend the preliminary planning session scheduled for next week.

The only suggestion I have is a rather general and probably obvious one. The Soviet representatives can be rather sensitive to matters of protocol and genuine showings of friendship on our part. I think that we shouldn't be afraid to go a long distance in trying to accommodate them as to times and places of meetings, agenda, representations at meetings, their needs to check with higher authority, and so forth. I have found that once you have won their confidence through a show of genuine friendship and interest, by taking initiatives to prove this, it is possible to carry on negotiations in a very satisfactory manner.

I would rate my extensive tour last August of the nuclear energy facilities, research establishments and universities in the Soviet Union, as the head of a ten-man delegation, as very successful. For your information, I might add that I shall be visiting Moscow again this September to speak at a symposium on the chemistry of the transuranium elements at the Institute of Physical Chemistry, and to continue negotiations in my role as President of the American Association for the Advancement of Science concerning exchange arrangements between the AAAS and the Soviet Znaniye Society.

Cordially yours,

Glenn T. Seaborg

Milestones. He was remarkably clear and in good form for a man of 85 years of age.

Jol Liljenzin worked with Jim Harris and Matti Nurmia on the preparation of targets for the SuperHILAC in order to get familiar with this technique; he is also starting to prepare materials and apparatus for operation of the extraction chromatography separation of superheavy elements.

Eric, Suki and I took a hike to the water tank.

Wednesday, June 14, 1972 - Davis

Helen, Bill, Sheila, and I drove to Davis to attend the commencement exercises of the College of Letters and Science in which David was a member of the graduating class. When we got into Davis, we picked up Steve and his friend Lois Stein at the apartment on 8th Street, and then proceeded to the campus. I went to Room 264 in the gymnasium where the stage party assembled. Those in the party were: Executive Vice Chancellor Elmer W. Learn; Professor Lawrence J. Andrews, Dean of the College of Letters and Science; Mitchell Edward Abbott, B.A. Candidate; Mrs. Herbert A. Young; Neal W. Gilbert, Chairman of the Letters and Science faculty; Douglas W. McColm, Chairman of the Letters and Science Executive Committee; Stephen Raymond Krufft, Chairman of the Deans' Student Advisory Council and a B.A. Candidate; Richard Snow, Associate Dean for the Division of Biological Sciences; Hendrick J. Ketallapper, Associate Dean; Roland W. Hoermann, Associate Dean; Robert A. Wiggins, Associate Dean; and Professors Leroy F. Troutner, Valerie A. Tumins, and Richard G. Swift of the Executive Committee.

After robing, we led the academic procession to the stage on Toomey Field, followed by the faculty and the graduating class. The audience essentially filled the stands. The Marshal, Physics Professor Charles G. Patten, opened the ceremony. A number of awards were presented to outstanding students: the Herbert A. Young to Richard Bryan Mertens; the Mary Jeanne Gilhooly Memorial Award to Sarah Joan Woerner (a friend of David's); and the V. Glenn Winslow Memorial Award to Kevin Michael Bacon. Mitchell Edward Abbott then delivered a short address, "Excellence in Mass Democracy: The Escape to Duty."

I was introduced by Professor McColm. I gave my prepared address, "Youth, Change and Action." I opened with a reference to the long and continuing connections of the Seaborg family with Davis--mentioning that our son David was graduating in the group today, our son Steve, who is continuing as an undergraduate at UC/Davis, had achieved lasting fame by sitting on the railroad tracks, and our son Eric will be starting as a freshman next fall. I also referred to some of our other children who were so misguided as to go to such obscure eastern establishments as Harvard and Radcliffe.

The degrees were then conferred. After the exercises concluded with the exit of the stage party, we all gathered together with David. His friend Cathy Wong took some pictures of Dave alone and with Helen and me. Dave introduced me to a number of his friends throughout the day, including Steve Krupt, Steve Brian, Mike Pesce,

Marco Dondero, Joe Archer, Harvey Chinn, Scott Faivre, Marilyn Gee, and Ahmed Geilani.

We then all went over to the South Patio Room of the Memorial Union to participate in a luncheon for honored guests. Our group sat together at a table. Adjoining our table were Dean and Mrs. Lawrence Andrews and Dean and Mrs. Albert Burdette (he was Dave's calculus professor). We had a little visit with Tom Dutton whom I knew as a football player with the 1952 and 1953 teams at Berkeley, and who is now Vice Chancellor for Student Affairs at Davis.

After lunch, Dean Andrews took Sheila to the Letters and Science offices where she visited with him and his staff officer, her friend Robin Pardini. We dropped Steve and Lois off at the their apartment. Then Helen, Dave, Bill, and I went to Hammarskjold House where we helped Dave move his manifold belongings--including his snakes and mice--out of Room 217 where he has been staying this last year. Following this, we went by the Cole Facility where Dave picked up some more mice for his snakes. We then went by Mrak Hall, where I dropped in to meet Robin Pardini and get Sheila. We then all drove back to Lafayette.

When we returned home, Helen, Dave, Eric, Dianne, and I had a quick dinner and then all except Dianne went on to attend the Commencement at Acalanes High School in which Eric participated as a graduate. (Lynne and Bill came over to stay with Dianne.) Eric graduated with the honor of being named a Life Member of the California Scholastic Federation (CSF). This was Principal Stanley Walgren's last commencement; he is retiring after 32 years. Somewhat more than 300 students graduated including a number that had started with Eric in kindergarten. After the commencement, I met Mrs. Connery, Eric's French teacher. Eric joined his class in an all-night party somewhere in San Jose where they traveled by bus. Of his kindergarten classmates, Nicole Bouche, Kirk Robinson, and John Riksheim also made CSF. Other kindergarten classmates were Scott Alexander, John Fredericks, Timothy Lahey, and Steve Gilcrest.

Chancellor Albert Bowker called me at 10:00 p.m. regarding the appointment of Professor Mac Laetsch as Director of the Lawrence Hall of Science, for which he requested my support. He has met with Harvey White and John Lawrence who still take a dim view of this appointment. I said the key to this is to get Laetsch's agreement to continue the museum and teacher training aspects of LHS, and Bowker said he is doing this. I also mentioned the LHS Advisory Committee's plans to play a supervisory role and Bowker agreed to this. On this basis, I said I would support the appointment of Laetsch.

Thursday, June 15, 1972 - Lafayette - Washington

Eric returned home from his all-night class party with five friends (Danny Akol, Niels Sorenson, Kirk Robinson, John Riksheim, and Scott Alexander) at 5:15 a.m. this morning. They played basketball on our court for about an hour.

Walter Berl called me at 7:15 a.m. from Washington to say my meeting with President Echeverria at 9:00 a.m. tomorrow is still on

and I have a luncheon meeting with Antonio Ortiz Mena (President of the Inter-American Development Bank).

Helen drove Dianne and me to the San Francisco Airport where we caught TWA Flight No. 64 leaving at 9:10 a.m. and arriving at Dulles Airport at 4:45 p.m. Delmer Brown occupied a seat directly in front of us, which gave us a chance to converse; he said he had enjoyed talking to Lynne at a recent meeting at Alumni House. I also talked to Dick Smith who is head of the AEC Regulatory and Safeguards Office in Berkeley; this office has expanded to twenty people and may go up to 40 in fiscal year 1974.

We were met by Oswald Utterbak, an AEC driver, who drove us to our home at Harrison Street. Here we met Jane and Pete and gave them the two large suitcases full of Pete's things that we had brought.

I then rode with Udderback to the Naval Officers Club at the Bethesda Hospital grounds to attend the retirement reception for Commissioner and Mrs. Wilfred Johnson. Many of my old AEC friends were present. Chairman Schlesinger made a few remarks and presented his chair name plate, desk name sign and a painted portrait to Bill, who responded with some gracious remarks. Schlesinger said he would be in touch with me later regarding my possible appointment as the U.S. representative on the Scientific Advisory Committee of the IAEA. I also talked about this with Jerry Tape, who is considering an offer to serve as U.S. Ambassador to the IAEA. I also talked to Justin Bloom to suggest that the Division of International Affairs might be interested in becoming involved in the publication of Travels in the New World. I talked to John Abbadessa about the problems created by the cut in the Division of Research Chemistry budget. I heard many references to Jack Hollander's visit this week to talk to a number of AEC officials about the LBL program on Energy and the Environment.

I rode back home with Udderback. Pete and I walked down to 38th Street where we found Dianne with her old gang. Among those she visited with were Abbe Kaufman, Kate and Liz McClellan (on a visit from Kuwait where their family moved recently), Peter and David Shapiro, Elizabeth and Ned Rich, Sarah and Ann Luria, Jimmy Flynn, Ann, Katie, and Danny Hawk, and Charles, Richard, and Elizabeth O'Leskar. Pete and I called on the Lurias; I brought greetings to Scott from Eric. Scott, who is going to MIT, was very downhearted that Eric is not going to Harvard.

I had a late dinner with Jane and Pete. Dianne was still with her friends on 38th Street, but soon came home to have her dinner.

Friday, June 16, 1972 - Washington

Walter Berl picked me up at 8:00 a.m. and drove me to AAAS headquarters, where we joined Phil Abelson, Leonard Rieser, and William Bevan. We all rode to Blair House in Abelson's car; here Caryl Haskins joined us. We met from 9:10-9:30 a.m. with President Luis Echeverria, Dr. Enrique Martin del Campo, and an interpreter.

Serving as our spokesman, I started by expressing appreciation to the President for meeting with us, then described the forthcoming



Friday, June 16, 1972 (con't)

meeting sponsored by AAAS and CONACYT (the National Council of Science and Technology of Mexico) to be held June-July of next year. I referred to the President's interview in the UNESCO journal Impact of Science on Society entitled "to harness what nature gives us" and said this is serving as a subtitle to our title for the joint meeting, "Science and Man in the Americas." I invited the President to serve as Honorary President of the meeting and he accepted immediately. I described the nine themes of the meeting and said we hoped he would participate personally in number 6, "Science, Technology and Social Change;" he indicated he would give this serious consideration.

After this meeting, Rieser, Berl, Bevan, and I went into a neighboring room where we met with a number of representatives of the Mexican press. Pictures were taken and some of the interview was covered by TV. I described our meeting with President Echeverria, his decision to serve as Honorary President of our meeting, and the concept of our planned joint meeting in some detail. I was asked if political and economic factors had stood in the way of U.S.-Mexican cooperation in science and technology. I responded that these had played some role, but more important was the need for more contact between U.S. and Mexican scientists and engineers, and this would take a giant step forward as a result of our joint meeting. I emphasized that the flow of information was a two-way street and both sides would profit from the meeting. At the end, in response to a question, I described the cooperation between the U.S. and Mexico in our nuclear energy programs.

After the meeting with the press, Rieser and I walked back to the AAAS headquarters to attend a meeting of a Subcommittee of the Committee on Council Affairs. Present at this meeting were Rieser, Bevan, David E. Davis, Homer S. Newell, S. Fred Singer, and Catherine Borrás. The purpose of this meeting was to prepare the agenda for the joint meeting in August of the full Committee and the Section Secretaries to restate the Bylaws of the Association. We decided to suggest that the Electorates should be identical with the Sections.

I went by taxi, with Berl and del Campo, to the Inter-American Development Bank (on 17th Street next to the Lincoln Branch of Riggs National Bank). Here we had lunch in a room at the southeast corner of the 12th floor (with a marvellous view) with Antonio Ortiz Mena, President of the Bank, Beatrix R. Harretche, Technical Assistance Division of the Bank, and Syd Smuckler and E. Rodriguez of the Bank. I raised the question of financial support from the Bank for our joint AAAS-CONACYT meeting and Ortiz Mena immediately agreed to give us some. He said he will coordinate this support with any that we might receive from the World Bank. I learned that Ortiz Mena played a key role in obtaining the National Nuclear Center at Salazar for the Mexican nuclear program. I gave him an autographed copy of Man and Atom.

I then rode with del Campo and Berl back to AAAS headquarters to attend the afternoon session of the Subcommittee of the Committee on Council Affairs (which Newell had left). We continued discussing the bylaws and the meeting adjourned just before 4:00 p.m.

I walked to Science Service Headquarters (1719 N Street) and presided over a meeting of the Board of Trustees (copy of minutes attached). Present were Trustees Milton Harris, Bowen Dees, Allen Astin, John Troan, O. W. Riegel, Deborah Wolfe, Gerald Holton, Gerald Tape, and staff members Ted Sherburne, Dorothy Schriver, Ken Frazier, and Don Harless. The meeting was largely devoted to a discussion of the future mission of Science Service, especially in the area of public understanding of science. The discussion culminated in a motion by Astin, which carried unanimously, that I appoint a committee to prepare a statement, to be ready in preliminary form at the November meeting, updating the mission of Science Service. After the meeting, I asked Sherburne to request Tape, Dees, Duscha, and Harris to serve on this committee.

I rode with Tape to the Harrison Street house. He told me about further impending resignations at the AEC, possibly including John Totter, John Kelly, and Spofford English, and about Maurice Goldhaber's plans to soon resign as Director of Brookhaven National Laboratory. He said he didn't think the question of the IAEA positions (Ambassador and membership on the Scientific Advisory Committee) would be settled until after the November election and possibly as long as a year after that.

Dianne attended a party in honor of her and the McClellan girls at the Canarys this afternoon, then came home with Brendan Canary who will stay with us until Sunday as Dianne's house guest. Dianne and Brendan visited Dianne's friend Rhoda McFarlane in her home during the evening. They then stayed up until about 4:30 a.m., i.e., Pete and Jane found them still up when they returned from work at 2:30 a.m.

Saturday, June 17, 1972 - Washington

I took a taxi to the AAAS headquarters to attend a meeting of the Board of Directors. Present were Mina Rees, chairman, Rieser, Haskins, Branscomb, Blackwell, Golden, Bevan, Trumbull, Abelson (for a short time), and Borrás. We started with an executive session in which we discussed recent progress in connection with the AAAS-CONACYT joint meeting. We decided to keep the U.S. Executive Committee as it is, although its work is essentially completed. It was noted that Mendez-Docurro and I are serving as Co-General Chairmen for the meeting. It was agreed that I should write an editorial for Science describing the present status of plans for the meeting.

We then went into regular session. Bevan made his Executive Officer report. He told us about the possibility of AAAS occupying a building, to be constructed by the Brookings Institution, at 18th and Massachusetts Avenue next to the main Brookings' buildings. AAAS would rent this space. An alternate site, on Massachusetts Avenue toward 17th Street, would involve AAAS building and owning our building, a course of action which a number of members of the Board seemed to favor. Abelson gave a report on his recent visit to Brazil and Argentina; I suggested that the AAAS find the proper auspices to send him on a similar trip to Africa.

We had lunch in the nearby lunchroom and continued in the afternoon. We discussed the Arden House Conference on the future of

## MINUTES

## MEETING OF THE BOARD OF TRUSTEES OF SCIENCE SERVICE

Friday, June 16, 1972, 5:00 p.m.

Pursuant to call, the meeting convened at 5:00 p.m., with President Seaborg in the chair. The recorder listed the following Trustees present: Allen V. Astin, Bowen C. Dees, Milton Harris, Gerald Holton, O. W. Riegel, Glenn T. Seaborg, Gerald Tape, John Troan, and Deborah P. Wolfe. Edward G. Sherburne, Jr., Director; Dorothy Schriver, Assistant Director; Kendrick Frazier, Editor, Science News; and Donald Harless, Business Manager, were also present. Trustees Athelstan Spilhaus, Frederick Seitz, Jacob Rabinow, Julius Duscha, Norman Cousins and Edward Scripps II were absent.

Dr. Seaborg introduced Dr. Deborah Partridge Wolfe as a new member of the Board.

Minutes of the April 26, 1972, meeting of the Board were approved as distributed.

Mail ballot of the Executive Committee, mailed May 16, 1972, completed May 25, 1972, "RESOLVED, That J. William Keith, Jr., be retained to conduct the audit for the fiscal year ending March 31, 1972" was ratified by the Board.

Dr. Harris reported on the June 12 meeting of the Financial Advisory Committee and asked that a new member be appointed to fill the vacancy created by Wallace Brode. He stated that Aaron Rosenthal has been a great asset to the committee and expressed appreciation. Upon suggestion and direction of Dr. Seaborg, Mr. Sherburne was asked to invite Jacob Rabinow to become a member of the Financial Advisory Committee. Dr. Harris urged that management take a hard look at how Science Service can survive without the aid of grants, and stated that while we should still try to get grants, money is very difficult to obtain from foundations and government, and Science Service should dedicate itself to finding a way to operate on a breakeven basis.

-2-

Mr. Sherburne explained that the increase in subscription price to Science News and the advance and renewal effort had resulted in excellent returns, but that it was too soon to predict what the final impact will be on revenue and circulation. This will not be known until September at the earliest.

Dr. Harris urged that under no circumstances should the Science Talent Search Scholarship funds and Science News deferred income, which are now in separate accounts, be used for any other purpose despite the financial condition of Science Service.

Dr. Seaborg began the discussion of the mission of Science Service by calling attention to memoranda from Dr. Holton, Mr. Scripps and Mr. Frazier which have been made a part of these minutes.

Dr. Holton indicated that a very serious crisis exists in this great age of science which has had major effects on teachers, students, and the public at large, and that a great deal of research is necessary to find the causes and determine what should be done. He suggested that youth and teachers are very important and that we should explore the feasibility of producing a high quality publication which youth and teachers could not do without.

The point was made that Science News is an adult magazine read by scientists and engineers to keep up-to-date out of their own field, students, teachers and intelligent laymen. Caution was urged in changing to aim at a specific audience.

During lengthy discussion, specific comments and suggestions included:

Science interest is not dropping off, but is going through a transition.

Science News should be such an excellent publication that it would become a necessary part of the classroom and that students would feel cheated if it were not available to them.

Pessimism was expressed about getting money from students and teachers

-- if the magazine could be made an asset to the educational process, would the National Science Foundation fund it? Could we join forces with another magazine? Could we give copies to schools gratis, or at a cut rate?

It was pointed out that public understanding of science efforts are now becoming aimed at public understanding of science and technology. Science News presently covers both, but it should clarify the difference and both should be viewed and assessed in different ways.

Dr. Dees suggested that Science News should not take science education as its aim. The problems we will face in the next few years will be very different from today's, and we should not abandon the goal of interest to all segments of the public.

Dr. Holton suggested that an advisory group of teachers be assembled to recommend how Science News could be made usable to schools.

Dr. Astin moved that President Seaborg appoint a committee composed of a small group of members of the Board to discuss and draft a clearly defined mission for Science Service in terms of challenging but "doable" concepts, and present a preliminary report to the Board at its next meeting. Mr. Riegel seconded and the motion was approved.

Dr. Seaborg asked members of the Board to send suggestions to Mr. Sherburne for transmittal to the Committee. It was stressed that the Committee should analyze the whole program and philosophically spell out what Science Service should be doing and suggest practical applications.

The date for the next meeting of the Board was set for 10:00 a.m., October 23, 1972 in the Science Service Building.

Dr. Seaborg requested that Mr. Sherburne ask the following members of the Board to serve as members of the Committee to consider the mission of Science Service: Gerald Tape, Chairman; Bowen C. Dees; Julius Duscha; and Milton Harris.

Following Executive Session the meeting adjourned.

Dorothy Schriver  
Recorder

AAAS and decided that the Arden House Committee will prepare an explanatory paper to be published in Science in October which will announce hearings (requiring prepared statements) to be held at the Washington meeting on December 27 or 28. We changed the date of the Conference to October or November of 1973.

I took a taxi to our Harrison Street home. Pete prepared dinner for Dianne, Brendan, himself, and me (Jane was working). I learned that Dianne and Brendan had slept until about 1:15 p.m. and had visited with Sarah Luria during the afternoon. After dinner, they visited with the 38th Street gang. Jim Saunders dropped by and I gave him, on Dave's behalf, a box of slides (covering their trip together last summer), a cassette tape with a recorded message from Dave, and a box of Sees Chocolates to be passed on to Don Schuirmann. I also gave Jim an autographed copy of Man and Atom. Again Dianne and Brendan returned home late and stayed up until 4:00 a.m.

Sunday, June 18, 1972 - Washington - Lafayette

I took a taxi to AAAS headquarters to attend the second day of the Board of Directors' meeting. We continued along the planned agenda. Bevan gave a report on financial planning and staff projection for the next few years; substantially more staff will be needed. We discussed in some detail the role of AAAS committees and adopted, in principle, the recommendations in Bevan's report "AAAS in the Decade Ahead (Planning Memo Two)." We had lunch in the lunchroom. I sat at a table with Branscomb, Bevan, and Berl (who had come for this purpose) to discuss a letter that I will send to the members of the Council of the Americas soliciting funding for support of the Mexico City meeting. In a conversation with Rieser, I also agreed to call Robert McNamara of the World Bank to solicit support from that quarter. Rieser had discussed this with William Clark, McNamara's assistant. We continued the meeting after lunch. I agreed to call Pat Moynihan to try to induce him to attend AAAS Board meetings.

I called Betsy McFadden to discuss the status of Travels in the New World. I mentioned to her that Justin Bloom plans to investigate the possibility of the involvement of AEC International Activities people in the publication of the book.

After the meeting, Jimmy Stickley of the AAAS staff drove me home. Here I met Dianne who had packed our big red plaid suitcase full of her things which had been left in Washington. (Brendan had left around 3:00 p.m.) Pete and Jane gave me a tie as a Father's Day gift which Pete handed me since Jane had already left for work on the swing shift.

We said goodbye to Pete, then rode to Dulles Airport with Jimmy. Here we boarded TWA Flight No. 63 which left at 6:15 p.m. and arrived at San Francisco Airport at 8:20 p.m. Louis Heilbron sat in the seat next to us. Eric met us and drove us home. Waiting for me there, as Father's Day gifts, were a large tangerine-colored leather chair for my study from Helen, a pair of slacks from Dianne, a book about Benchley from Dave, and an Adlai Stevenson record from Eric.

Monday, June 19, 1972 - Lafayette - Northern California

Helen, Dave, Eric, Dianne, Suki, and I started off at 9:00 a.m. on a vacation trip with Eric driving our station wagon. We drove north on Highway 101, turned left on Highway 128 at Cloverdale, and drove to Paul M. Dimmick State Park in the redwood forest where we had lunch. After lunch we drove on to Fort Bragg and visited the Pygmy Forest Reserve of the Jackson State Park a few miles southeast. This is a remarkable area full of trees of stunted growth, apparently due to some kind of soil deficiency.

We then drove north on Highway 1 to its junction with Highway 101 at Leggett, where we took a short side trip to drive through the Drive-Through Tree. We then went north on 101, the Redwood Highway, through Richardson Grove (a beautiful stand of large redwood trees), to Garberville. We drove west from here to the vacation home of Jim and Rebecca Cason. They have 400 acres with Bridge Creek running down the middle of the mile-long length at the bottom of their valley. We had dinner, spent the evening in conversation, and stayed the night.

Tuesday, June 20, 1972 - to Trinity Alps

We breakfasted with Rebecca and Jim and then went down to explore Bridge Creek. Suki and I hiked up an old skid (logging road) on the northeast slope, then up one on the southwest slope to the top and back down via a stream bed where the Casons' spring is located. David did some hunting for small animals.

We left the Casons' a little after noon and drove north on Highway 101, turning onto the Avenue of the Giants just north of Redding. We stopped for a picnic lunch at Franklin K. Lane Grove. We continued north on 101 through Eureka (where we saw the PG & E Humboldt Nuclear Power Station) to Arcata (the site of Humboldt State College), where we turned east on Highway 299. We drove to Weaverville through 90 miles of beautiful country and checked into the Red Mill Motel (Cottage No. 6). We had dinner at The Alps (coffee shop).

Wednesday, June 20, 1972 - Weaverville

We had breakfast in our cottage. After, we drove north on Highway 3 to Trinity Lake (Clair Engle Lake) and took a side visit to Trinity Alps Resort (a rather nice vacation spot). We then continued to Swift Creek Road (gravel) where we had a picnic lunch near a small brook. We then hiked along Swift Creek Trail. Helen and Dianne stayed behind on this trail while the rest of us continued to the junction with Granite Creek Trail. We took this toward Granite Lake. Suki and I hiked about halfway there and then turned and went back to meet Helen and Dianne. We had marvellous views of snow-capped mountains along the way. Dave and Eric continued on to Gibson Meadow, just short of the lake--an altitude of 5900 feet. We drove back to Weaverville, bought some groceries and Helen prepared dinner for us in our cottage at Red Mill Motel.

Thursday, June 22, 1972 - Weaverville

We had breakfast in our cottage and then drove on Highway 3 to

Granite Mountain Road. We drove in 3 miles to the end of this narrow and winding dirt road, where Dave, Eric, and I started out on the Granite Mountain Trail. This is a five mile hike going up to 8000 feet, an altitude gain of about one mile. We stopped for lunch at a beautiful stream plunging down the mountain side. Here we had a marvellous view of Trinity Lake, looking southwest, with three ranges of mountains of increasing heights in view against the skyline in the background. It was sunny, moderately warm, with a little breeze and not a cloud in the sky. We ate sitting in the sun due to the moderate temperature at this altitude.

After our lunch we continued up the trail. It went up and up and when we finally reached a trail marker that indicated one half mile to go, we were very much heartened. As we approached the top of Granite Mountain, a portion of the trail was covered in deep snow. When we reached the lookout at the top, we had marvellous views in all directions. We saw Mount Shasta and Lake Shasta to the northeast clearly and the snow-covered peaks of the Trinity Alps to the west and north. We saw Mount Lassen south of Mount Shasta. After 45 minutes at the lookout, we hiked back down to the parking lot at a rather rapid pace. The elapsed time for the hike was about six hours.

Helen, Dianne, and Suki, who had spent the day in Weaverville, met us. We drove back to our cottage where Helen prepared dinner.

#### Friday, June 23, 1972 - Weaverville

We had breakfast in our cottage. Afterward, we all visited the Joss House, a Chinese Temple of Taoist worship built in 1852-3 and rebuilt in its present form in 1874 following destruction by a fire. The name Joss is a Chinese contraction of Dias from the original Spanish name "Casa de Dias." It remains as it was during its days of use with the original furnishings and was donated to the California State Park system in 1956 by Moon and Dorothy Lee, the last Chinese users of the temple and who still use it for worship.

We also visited the J. J. (Jake) Jackson Memorial Museum, which displays historical pictures and materials of many kinds related to Trinity County and Weaverville's early history. This was a gold mining area of importance and the exhibits reflect this. We visited the Weaverville business section with its brick buildings trimmed with iron-shuttered doors and its spiral stairways. The Weaverville (Rexall) Drug Store was founded in 1854 and is the oldest store in California to continuously operate in one building.

After these tours, Eric, Dave, Suki, and I drove along Highway 299 to Junction City, where we turned off onto Canyon Creek Road. We drove 12 miles to the end of this road and parked. We had a picnic lunch, then hiked on Canyon Creek Trail about 3.5 miles to Canyon Creek Falls; this is about one-half mile into the Primitive Area. The Falls were breathtaking and we spent 15 minutes there and then hiked back to the parking lot. This hike consumed 3 hours.

While we were hiking here, Dianne and Helen did some hiking in the area above our motel and discovered an old gold mine shaft. We had a chicken dinner, purchased in Weaverville, in our cottage. After



dinner, Helen and Dave drove around to hunt for small animals of various kinds (as they did last night).

Saturday, June 24, 1972 - Weaverville - Redding - Lafayette

We all had breakfast in our cottage. Afterward, Dave, Eric, Dianne, Suki, and I took a hike up the road to Weaver Bally Mountain, a total distance up and back of 2-3 miles. We saw the head of the old gold mine diggings that Helen and Dianne had seen yesterday. We all drove by the house on Center Street that Frank and Mary Young had lived in starting in the 1860's; we learned about Frank Young from the diary he kept in 1859, before he was married, as a resident of Weaverville--this was published in the pamphlet "Trinity 1967." We stopped again at the Jackson Museum and bought the whole series of 15 Trinity pamphlets.

As we were leaving Weaverville, we drove out to the end of Glen Road to visit the See Yup (Chinese) Cemetery; there are no headstones remaining and apparently most of the cremated remains have been returned to China. We started on our journey home at 11:30 a.m., driving on Highway 299 generally east. Just before Redding we stopped at the Shasta Museum (in restored Shasta County Courthouse). This is one of the best historical museums of the gold rush era and following days. Shasta was a city of 3,000 people at its peak in the 1850's and served as the county seat. The brick walls of a number of other buildings are still standing.

We drove on to Redding and had lunch at the Arctic Circle Drive-In. We then drove south on Highway 5, leaving Redding at 2:00 p.m. and arriving in Lafayette a few minutes after 5:00 p.m.

Sunday, June 25, 1972 - Lafayette

I spent a good part of the day catching up on reading correspondence, papers, journals, etc. This included my notification that I have been elected a member of the Board of Governors of the Swedish Historical Foundation for the 1972-75 term. I also found a copy of the first SuperHILAC newsletter to outside users which Al Ghiorso sent out (copy attached).

I did a little weeding in Dianne's garden. Lynne and Bill came over in the afternoon and we told them about our trip to Trinity County; they are leaving for that area on Tuesday. They had dinner with us.

Monday, June 26, 1972 - Berkeley

I returned to the office after my vacation and spent the first part of the morning catching up with Sheila on various matters. Ghiorso dropped in to discuss a problem with the appointment of Bob West to a new Laboratory Associate Directorship, responsible for plant engineering. Ghiorso told me that he had just heard from the ACS that he has been chosen to receive the 1973 award for Nuclear Applications in Chemistry (sponsored by G. D. Searle and Co.).

## Newsletter for Prospective Users of the SuperHILAC

Although we have been quite successful in accelerating heavy ions through the SuperHILAC a number of problems have arisen which are not within our capacity to solve within a short time. For this reason I think that a realistic assessment as to the possibility of supplying sufficient beam time for research during the summer months of this year is in order at this time.

The difficulties arise in the following ways. The accelerator is an extremely complicated device and it is clear to us now that a strong effort is going to be required to debug it to the point where it can be used in routine research. As of this writing the 3MV injector is just being brought on line and we anticipate that considerable effort will be needed to bring it up to the performance standard that we need. The 800 KV injector is presently being used in the testing program but is limited to about 600 KV by a breakdown problem which we think we can cure. As a consequence for the present, we can get only small beams of  $^{40}\text{Ar}$  since we have to use the +8 charge state and of course we cannot accelerate ions heavier than this. The radio frequency power amplifier system is working relatively well but has many bugs which will require a lot of time and effort to correct. Mechanical trimming of the tank tuning "steps" will be required and this involves letting the machine up to air. Beam tuning is turning out to be fairly complicated since there are many more degrees of freedom with this accelerator than there were with the old HILAC. At times we have achieved high transmission of beams through the system but we are not yet convinced that the alignment of the poststripper drift tube quadrupoles is good enough for reliable operation. Probably we will check the alignment and this will necessitate about a two week shutdown if we combine that job with other mechanical and electrical work that has to be done. There are many magnetic elements which have yet to be installed along with their power supplies and there are many diagnostic devices needed to make tuning faster and more precise, but we are limited in what we can do by the manpower available. Our budget is still only that of the old HILAC and this means that we are strictly limited in the speed with which we can accomplish our objectives.

As if these troubles were not severe enough to tax our ingenuity we have another formidable one over which we have absolutely no control. The campus and laboratory crafts - plumbers, electricians, carpenters, painters, and laborers - have been on strike for the last 3 months. This means that all work on the cave system is at a standstill. Although our accelerator technicians could do this work they are all busy at jobs vital to the machine itself. If the strike is not settled soon we will have to shift some to this area to enable us to raise the beam intensity (we have been using nanoampere beams at night for our present testing procedures).

As of the writing of this newsletter (June 16, 1972) we are about to start a two week compulsory vacation period, made necessary by the need to stay within our FY-1972 budget ceiling. It is highly likely that we will start our FY-1973 operations by letting the machine up to air for some of the needed alterations.

It should be readily apparent that we are not yet in a position where we can declare the SuperHILAC operational and unfortunately this situation is likely to prevail through July. Hopefully, we might reach this point in August and I will try to advance this information as soon as it becomes apparent to us.

Lest the recital of this somewhat grim list of problems be too depressing let me hasten to modify it by mentioning the good things that have happened. The very fact that the SuperHILAC does work is a tribute to the tremendous effort put forth by Bob Main and his engineers and technicians. They have shown that they can reach their design parameters, that particles can be accelerated over a wide range of energies with good efficiency and that the energy resolution appears to be as calculated. Given enough time they will be able to make the SuperHILAC into a superb accelerator. For the first time in the world many important ultra-heavy ion experiments will be performed and I am certain that the results will be worth waiting for. In addition to this great contribution to the low energy field complex high energy particles ( $\sim 2000$  MeV/A) will be available when the Bevalac project (the injection of SuperHILAC ions into the Bevatron) is completed in the fall of 1973. An important consequence of the Bevalac project is the time-sharing feature which will result in the simultaneous use of the SuperHILAC by more than one experimenter at a time.

- 3 -

The SASSY project (our recoil separator designed for searching for the superheavy elements) is going well and should be on-line by the time the SuperHILAC is operational. We should thus know at an early date whether there are any exotic species which can be used for physical and chemical research.

A group of chemists from five laboratories--Lawrence Berkeley Laboratory, Lawrence Livermore Laboratory, Oak Ridge National Laboratory, Argonne National Laboratory, and Los Alamos Scientific Laboratory--is being organized. This group will work cooperatively on the chemical identification of the products (both short and long lived) resulting from the bombardment of target elements with the heavy ions furnished by the SuperHILAC, with emphasis on the chemical identification of any superheavy elements that might be produced. As a name for the group, Super Elements Inter-Laboratory Chemists (or SHEIKS) has been suggested. Acceptable?

Monday, June 26, 1972 (con't)

I met Jens Kratz, my new postdoctorate from Professor Herrmann's laboratory at the University of Mainz. I introduced him to Ghiorso. Bob Silva returned from Oak Ridge over the weekend and came to work today. He will spend a day or two before going on a vacation with Mrs. Silva somewhere in California and will return on July 5.

Silva, Kratz, Liljenzin, and I conferred about our program of chemical identification of superheavy elements in the office adjoining our chemistry lab. We then went up to the HILAC Building where I showed Kratz the HILAC, SASSY, and so forth, and introduced him to the Alonsos. I had lunch with Silva, Liljenzin, and Kratz at a table overlooking the campus near the cafeteria.

I called Robert McNamara in Washington in my capacity as AAAS President and described our plans for the Mexico City meeting, our meeting with President Echeverria and his agreement to serve as Honorary Chairman, and my meeting with President Antonio Ortiz Mena of the Inter-American Development Bank. I told him that we were soliciting funds from various sources, including the World Bank. He asked about the budget and how much we would need; I thought the budget would be between \$300,000 and \$500,000 (closer to the latter) and that we were thinking in terms of \$50,000 from the World Bank. He indicated that the Bank does not ordinarily finance this kind of thing but might be able to make a rare exception. He asked how much IDB would be giving, and I told him that Ortiz Mena had immediately told me that they would give us a contribution but do so in consultation with the World Bank. I told him that Leonard Rieser gave a thorough description of the program to William Clark (McNamara's assistant). Bob told me that he has not yet heard from Clark but will get in touch with him and let us know. I wrote Rieser describing the gist of this conversation.

Rolf Mehlhorn called to let me know that he is going to start work on July 1st in the Department of Physiology with Lester Packer for a 3-6 month period. We discussed the possibility of his finding a position with Hollander's Energy and Environment Group after this, and I said I would discuss this further with Jack. Mehlhorn said his calculations show that configurational mixing can cause a difference as great as an electron volt in the electrical ground states of actinium. Since this could be very important in predicting the chemistry of the actinide elements, we agreed that a meeting with Kratz, Liljenzin, and Silva might be arranged for some time early in July. The continuance of these calculations will require appreciable computer time.

Keith Owen Hodgson came up at 4:00 p.m. to give me a copy of his doctoral thesis, "The Synthetic and Structural Chemistry of Cyclooctatetraene Dianion Complexes of the Lanthanides and Actinides," to read in my capacity as a member of his committee in charge. He struck me as being a very capable young scientist who seems to have done an outstanding job on his thesis.

Eric, Suki and I took a hike to the water tank.

Tuesday, June 27, 1972 - Berkeley

I called Bill Wenzel about the impending move to hire Bob West as Associate Director in charge of general plant projects. I told him that a number of people in Chemistry were disturbed about this; he indicated that others are too. He told me that he understood from McMillan that this has been temporarily squashed. I told him that I would be at this afternoon's Directors' meeting when this was discussed and that people here have convinced me that this appointment would not be good for the Lab.

I called Daniel P. Moynihan at Harvard University to ask if he would be able to attend the future Board meetings of the AAAS in light of his absence at the last two meetings. I indicated that I felt personally involved because I had served as his sponsor in getting him elected to the Board. He explained that before he was nominated he had already made two academic speaking engagements of a public kind which he could not cancel, one of them being at Michigan Technological University. These dates happened to conflict with the AAAS Board meetings; he thought Bill Bevan had explained this to everyone. He told me that he takes this very seriously and definitely plans to be at future meetings.

I had lunch outside the cafeteria with Kratz, Liljenzin, Edelstein, Myers, and others.

From 1:10-2:20 p.m., I attended the meeting of the LBL Associate Directors. Present were McMillan, Fidler, Kelly, Thornton, Connell, Wenzel, Hollander, Pappas, Robert Hinckley, J. A. Bassham representing Calvin, and Tom Budinger representing Born.

Connell gave a short report including the information that the AEC contract for the University of California to operate the Lawrence Berkeley Laboratory, Lawrence Livermore Laboratory, and Los Alamos Scientific Laboratory was signed by the Regents at their meeting a week ago Friday.

Hollander gave a report on his visit to Washington to attend the briefing of the Commission by the Division of Biology and Medicine on the environmental and biomedical research programs that are being planned. He indicated that the briefing may have emphasized technical matters too much and policy and innovation matters too little to suit Chairman Schlesinger.

McMillan showed us a letter from Spofford English requesting that the Lab prepare, by July 10, a program in connection with its heavy ion work in response to the Joint Committee's comments on the nationwide heavy ion program made in the report covering this year's authorization hearing. He also read us a second letter in which Spof asked for information by July 12 concerning the Lab's plans for outside review committees. Pappas will send us copies of the letter on heavy ion work; Fidler will send us copies of the letter on review committees.

We then went into an executive session at which McMillan indicated that he had changed his original proposal from making Bob West an

Tuesday, June 27, 1972 (con't)

Associate Director in charge of general plant projects to appointing him chairman of the General Plant Projects Committee and Chairman of the Space Committee. Wenzel and I asked that final action on this be postponed until we could check with our constituencies. A postponement was agreed to with a discussion scheduled for a special meeting of the Associate Directors on July 5.

After the meeting, I met with George Pappas who brought me up-to-date on some of the things he had learned during his recent trip to Washington. The AEC budget has been reported out of the House Appropriations Committee, which means that there is a fair chance that Congressional action will be completed before Congress recesses next month. He said he had discussed with Kolstad the question of receiving some SuperHILAC support from the Physics branch of the Division of Research, but Kolstad indicated that he would only do this providing there was some kind of direct tie to the Physics Branch in an organizational manner. Pappas said he would think about this and then we will discuss it further. He also said that he had run into some opposition regarding further support for the work of Richard Marrus because of his lack of publications; I said I would look into this. I asked about accelerator improvement funds, and he said that we should get our case ready on a priority basis; McMillan will then hold his usual hearing and make his decisions.

Following my meeting with Pappas, I talked to Harold Fidler who indicated that our summaries of salary recommendations had overlooked Bob Main. I later found that we had included Bob's line in our original papers, but it apparently did not get transcribed in Harold's material.

From 2:45-3:30 p.m., I met in my office with Elijah Banks who was interested in discussing the future plans of CUWA. I first met him about four years ago when he visited me in my AEC Chairman's Office as a member of the Berkeley Award for Excellence in Youth winners group. He contacted me after our Huckleberry Trail presentation to EBRPD to request this appointment. He identified the Point Pinole project as one of great interest to him. He asked whether, as spokesman for CUWA, I might in the future be willing to personally contact such people as Secretary of the Interior Rogers Morton, Stewart Udall of Overview, etc. to help various projects, and I indicated that I would. He also described to me the perennial flooding conditions at Parchester Village near North Richmond and expressed the hope that CUWA might be interested in helping obtain remedial steps to correct this condition; I indicated that I doubted that this came within the purview of CUWA. I concluded our discussion by indicating that I would get in touch with him in order to visit Point Pinole with him and perhaps look at the Parchester Village situation at the same time.

Dick Frankel called at 5:00 p.m. to invite me to be interviewed in connection with a public interest program of John Bunting, Chief Executive Officer of the First Pennsylvania Bank in Philadelphia. Bunting makes social responsibility a major part of corporate posture. He has a plan to interview a number of public figures with a reputation of promoting the common good, and these will be published

for distribution to his stockholders and others. The next topic will be corporate responsibility and he already has acceptances from John D. Rockefeller III, Frank Morris (Utah), Charles Evers, William May (Chairman, American Can), and Norman Cousins. He expects to include Ralph Nader. Frankel will send me a copy of a previous report, and after studying this I will give him my answer.

As I drove home, leaving my office at 5:30 p.m., I heard over the car radio that there was a large grass fire raging in the hills of Lafayette. As I drove along Highway 24, it became more and more clear that the fire was in the area of our home, and the radio reports confirmed this by placing it at Happy Valley. I found upon arrival home that the fire was burning furiously in the area up at the end of Monticello Road. I immediately changed into old clothes and walked up to the end of the road and found that the fire was approaching the rear of the Hallmark home. Owners of the homes--the M. F. Hallmarks, Bob Smiths, Svend Pedersens--their friends and firemen were fighting the blaze near their back yard and wetting the roofs of their houses. The fire was brought under control by about 7:00 p.m. It raged up to the top of Lafayette Ridge where it was met by a number of fire engines and stopped before it could descend into the Spring Hill Road residence area. A number of bombers dropped borate water on the blaze to help keep it under control. About 100 acres were burned with the marring of a number of beautiful oak trees. The rumor was that the blaze was started by a couple of small boys playing with matches.

Wednesday, June 28, 1972 - Berkeley

From 9:15-9:45 a.m. I met with Jeanette Phillips. The company of West and Brady has been retained by the American Chemical Society to investigate the support for and public relations aspect of the Professor Enhancement Program (PEP). I am one of about twenty people that Mrs. Phillips (Field Representative) is interviewing in the western part of the United States. She inquired as to my attitude toward the PEP program, and I said that I was generally favorable but that a middle course between extreme socialization of the ACS and its present devotion to the scientific aspects of chemistry should be chosen. She asked me for my evaluation of the possibilities of raising a million dollars by assessing the 110,000 ACS members \$10 each; I said that this was unlikely to be successful but that perhaps a program of solicitation for larger amounts among a substantial number of selected people might raise this sum. As an example, I said that I would contribute some \$50 if asked. I indicated that I would be willing to help contact prospective donors.

At 10:15 a.m., I dropped by our Chemistry Room 203, Building 70, where Liljenzin and Kratz are performing some extraction chromatography practice experiments. They are separating about ten of the stand-ins for the superheavy elements labeled with radioactive tracers from uranium from a column of triisooctylamine on bioglass beads eluted with various concentrations of hydrochloric and nitric acids. The aim is to see whether the platinum group metals can be separated from uranium.

On the way back, I talked to Warren Garrison about the Mathilde Kland-English case; apparently she has been terminated and the hearing



process is proceeding. I also encouraged him to get into the environmental program, which he is doing. He is studying the reactions of ozone.

Bob Thornton dropped in at 11:00 a.m. to make a strong case for the qualifications and abilities of Bob West. He also indicated his high opinion of Dick Connell. We discussed the leadership of the Lab in general.

Bill Horne called me at 11:35 a.m. as a follow-up to Hulet Hornbeck's inquiry as to my serving on the Citizens Task Force on the Master Plan for the East Bay Regional Park District. I indicated that I said I wanted to be in this group, but would be unable to attend the July 18 meeting. He told me that Stewart Udall will be here; we might be able to arrange a time for me to see him before I fly to New York. I said that I am very interested in the entire operation and particularly in getting a hiking trail around the whole area. Horne told me that he is a consultant in the General Manager's office assigned to organizing and staffing the Citizen's Task Force.

I had lunch at a table outside the cafeteria with Liljenzin, Edelstein, Bucher, and William Kolbe. Edelstein told me that Professor Neil Bartlett wants to have a graduate student working with us to try to prepare Np(VII), Pu(VII), and Am(VII) fluorides using  $\text{XeF}_6$  as an oxidizing agent.

I talked on the phone again with Dick Frankel to accept the invitation to do an interview with John Bunting. He described their procedures and will send me more information. He indicated that he had a cool reaction about GEOMET. I said that I would send him, in strict confidence, the "Consolidated Financial Statements" and accounting notes which I have just received for his analysis.

At 3:30 p.m. I went down to visit Norman Edelstein in his lab to discuss the progress of his work. I met two of the summer undergraduate students: John Ruark from Redlands University who is working with Perlman on the role of oxides of iron in determining the color of pottery, and Linda De Lucia from Wagner College in Staten Island, who is working with the photoelectron spectroscopy equipment in Building 73 to determine the details of structure of alkali fluorides.

I wrote Arthur Wahl at Washington University in St. Louis about a piece of our original equipment he has found (copy attached).

Eric, Suki and I took a hike to the water tank, stopping at the Pedersens to survey the nearby effects of the fire. Lynne and Bill left this afternoon for a vacation in the Trinity Alps.

Thursday, June 29, 1972 - Berkeley

The newspapers carried an obituary on Farrington Daniels; I wrote a brief letter of condolence to his widow Olive (copy attached). I returned to Los Alamos Scientific Laboratory a Consultant Agreement (No. 882) to occasionally render my services there.

Berkeley  
XXXXXX

June 28, 1972

Professor Arthur C. Wahl  
Department of Chemistry  
Washington University  
St. Louis, Missouri 63130

Dear Art:

I would be delighted to receive the linear amplifier portion of our early counting system, as described in your letter of June 6. This is the only piece of our original apparatus that has been located so far. I am going to look around out here some more when I get time, because I am fairly sure that there should be some of the original stuff around.

The SuperHILAC is now in the previously planned shutdown period made necessary by budget stringencies. We will continue the debugging activities early in July, with the hope of getting beams as heavy as xenon perhaps in August. However, I believe that Al wants to devote a good part of August getting chemical information on elements 104 and 105 preparatory to the Symposium on the Chemistry of the Trans-uranium Elements to be held the first week of September at the Institute of Physical Chemistry in Moscow.

I am enclosing a copy, for your personal use, of a draft statement that Al has sent to John Unik for possible use in the Superhilac Users Newsletter, which will give you a little more information.

With best regards,

Cordially,

Glenn T. Seaborg

GTS/sms  
enc.

Berkeley  
xxxxxx

June 29, 1972

Mrs. Farrington Daniels  
1129 Waban Hill  
Madison, Wisconsin 53711

Dear Olive:

Helen and I were greatly saddened to learn of the passing of Farrington. As you know, he held a special place in our lives.

I came to know Farrington so very intimately during our work together at the Metallurgical Laboratory during the war. I found that he was not only an outstanding scientist, which I already knew, but also a wonderful human being. He played a key role in ensuring the success of that important project.

Farrington has had a long and distinguished career in chemistry. His earlier work included important contributions to physical chemistry; and, after the war, he became one of the world's leading authorities on solar energy. His great scientific knowledge was accompanied by an unusual combination of wisdom, kindness and concern for the welfare of others.

Helen and I hope that your realization of the extremely high regard in which Farrington was held by scientists and many other people throughout the world will be of comfort to you.

With sympathy,

Glenn T. Seaborg

GTS/sms

Thursday, June 29, 1972 (con't)

At 10:00 a.m., I dropped into Room 203, Building 70 where I learned from Kratz that the extraction chromatography calibration experiments of yesterday were quite successful.

I ran into John Conway, and Ralph Gutmacher of the Livermore Laboratory, who are working cooperatively on an atomic spectroscopy experiment with californium salt crystals. Here I met Joyce Strange who has just graduated from Berkeley High School and intends to attend Merritt College. She is a member of the group of minority high school students who are working in our Nuclear Chemistry Division during the summer; she is working with Jim Stacy on an environmental problem. I also met Kathy Rajnak, who is working with Conway on some spectroscopy calculations during the summer; she has been working with Bill Carnall at Argonne.

I dropped in to see Frank Asaro to receive a report on the faculty from minority colleges that are going to work in our Division during the summer. He said that there are three of them who are going to arrive within the next few weeks. I asked him to bring them in to meet me, which he will be glad to do. I also said that I would be glad to make arrangements for them to use the Faculty Club. Here I met Barbara Baird, who had just finished her junior year at Knox College, a member of the group of college students who are working in the Nuclear Chemistry Division this summer. She is working on the identification of pottery and so forth in connection with the archaeological research program of Perlman and Asaro.

Marvin Frankel (Dick's brother) called me in connection with John Bunting's interviewing me for his project on corporate responsibility. We discussed my schedule and possible dates; we should allow for a two-hour session. The recorded tapes will be edited and I will have final approval over their content.

I had lunch at a table outside the cafeteria with John Phillips of the AEC SAN office, Pappas, Liljenzin, Kratz, Edelstein, Myers, Bucher, and others.

At 1:45 p.m., I visited with Jack Hollander the Field Free Laboratory--Building 73, situated in a beautiful stand of young redwood trees. I met Tihomir Novakov and Norman Craig, a presidential intern from Kansas State University working with him. They showed me their photoelectron spectroscopy apparatus used in the aerosol characterization program funded by the California Air Resources Board. I also met R. A. Pollak, S. Kowalczyk, L. Ley (graduate students working with Dave Shirley), and they showed me their apparatus for x-ray photoemission studies of elements palladium through tellurium. These instruments operate with electrostatic fields. I also saw the large magnetic field instrument used for nuclear beta particle and electron spectroscopy studies. In addition, we visited with Tetsuo Hadeishi in his room where we saw his Zeeman-effect absorption spectrometers for detection of trace quantities of various elements.

Jim Haley invited me to say a few words at 4:15 p.m. to the Peacetime Radiation Incident Training Program group--made up of personnel from local law enforcement and fire departments--which has been meeting in the Building 70A Conference Room all week. I explained to them the importance of their learning about this new aspect of the nuclear age. I said it was unlikely that they would ever have to use their knowledge, but in case there was a public spill accident, they would have the knowledge to treat it without panic and thereby play a very important role.

Eric, Suki and I took a hike to the water tank.

Friday, June 30, 1972 - Berkeley

Today is the first "leap second" day in history. The clock will be set back one second to compensate for the rate of rotation of the earth in a manner to put world time on a consistent basis.

I called Dr. Haskell Monroe at Texas A & M in response to his letter inviting me to deliver the Rudder Lectures in the spring of 1973. I accepted his invitation and proposed the dates of March 26-28, 1973. We discussed the subject matter (some aspect of my experience in Washington with emphasis on the work with each of the presidents) and publication arrangements. I wrote Bill Bevan at the AAAS to report on my conversation with Daniel Moynihan about his attendance at the Board meetings.

At noon I met David down at the Chemical Biodynamics Building, and we went together to Melvin Calvin's office where we had a sandwich lunch. We then went up to the roof to attend the open house for the new Tissue Culture Facility which is housed in a trailer there. We met a number of the people, including Ann Hughes and Calvin's son Noel. We were given a thorough tour of the facility and complete description of the work. After this, we went back down to Calvin's office, since David was interested in working in some connection with Calvin's overall program during the summer. Calvin suggested that the best place might be to work with Ann Hughes in Building 74 on the problem of searching for chemical blocking agents for the effects of carcinogens. From here, David and I went up to my office on the hill. After spending a few minutes there, he went on to Building 74 to talk further with Ann Hughes and explore the possibility of summer employment.

Virginia Smith and Martha Sonnenberg came in for appointments in connection with their applications for medical and graduate school; each brought material for me to use in writing letters of recommendation.

I called Spof English to follow up Jack Hollander's letter recommending Andrew Sessler as Director of the Division of Physical Research. I stressed that I agreed with every word Jack wrote and that my reluctance in our previous conversation was because I do not want to lose Sessler here.

At 3:30 p.m., David, Sheila and I walked up to Building 80 for the retirement party honoring Ruby Waddell, the head telephone

operator. Pictures were taken and cake was served. On the way up, Dave reported on his meeting with Ann Hughes--the job prospects do not sound too promising in her unit, though she might be able to give him a 12-hour-a-week position in connection with the brain research program under Ed Bennett. I encouraged him to pursue other avenues as well.



GTS, Ruby Waddell, David Seaborg, Sheila Saxby:  
June 30, 1972.

Today was Doral Buchholz's last day at work. I emphasized to her how much I appreciated her tremendous contributions over the years.

Eric, Suki and I took a hike to the water tank.

Saturday, July 1, 1972 - Lafayette

Sheila came out in the morning to play tennis with Dave. I worked in the yard and, in the afternoon, helped Eric replace the broken boards in our tennis court backboard.

Sunday, July 2, 1972 - Lafayette

Dave, Eric and I went to Candlestick Park to see a San Francisco Giants-Los Angeles Dodgers baseball game. The Giants won, 9-3. Willie McCovey hit a grand slam home run making a lifetime total of 14, which ties the record in the National League held by Gil Hodges and Hank Aaron.

Lynne and Bill returned from the Trinity Alps at 9:00 p.m. They had hiked in, backpacking, from the end of the road going north out of Helena to Lois Lake, near Grizzly Lake and Thompson Peak. They had some interesting and scary adventures.

Monday, July 3, 1972 - Berkeley

I had a session with Earl Hyde, who had just returned from the Nuclear Chemistry Gordon Conference in New Hampshire, to bring him up-to-date on Andrew Streitwieser's request to have official status in our division, Doral's decision to retire, the Bob West matter, Spof English's request for information on heavy ion research and outside review committees, etc. He told me about Bob Epple's concern that research programs are not being cut in our Nuclear Chemistry Division to meet FY 1973 budget exigencies; in fact, we are undersupporting the SuperHILAC which distresses the AEC Division of Research very much.

Bill Wenzel returned my phone call at 11:30 a.m. I indicated that people in the Nuclear Chemistry Division are satisfied with the arrangement for Bob West. We discussed the matter further. I noted that Earl would represent us at the Directors' meeting on Wednesday.

I had lunch in the cafeteria with Hyde and Hollander.

I discussed Streitwieser's request with Street, Shirley, and Templeton, and they all agreed with the proviso that, due to our funding limitations, we placed well-defined limits on computer time, equipment purchases, etc.

At 4:30 p.m., David Shirley dropped in to indicate he needs the space in the Field Free Building (Building 74) which is now occupied by Tetsuo Hadeishi. He said that Hadeishi had promised him half this space, but now seems to have changed his mind. Shirley needs at least half and preferably all of it. I informed Shirley that Hadeishi had anticipated this request when I visited there last week and revealed his opposition to it. I said I would look into the situation.

Eric, Suki and I took a hike to the water tank. After dinner, the whole family gathered together a lot of trash, weeds, old lumber, etc. for pickup by the trash collection unit.

Tuesday, July 4, 1972 - Lafayette

I spent a good part of the day putting the shop and shed into shape. I also worked in the yard. Niels Sorenson had dinner with us; he will start back to his home in Switzerland tomorrow.

Wednesday, July 5, 1972 - Berkeley

I wrote D. S. Fahrney at the Franklin Institute nominating Albert Ghiorso as a candidate for receipt of The Franklin Medal (copy attached).

Justin Bloom called to discuss further his article on nobelium for the Italian Encyclopedia of Chemistry. In the course of the conversation, he told me that Chris Henderson had resigned from the AEC. Emilio Segre called to ask if he could come by to talk with me about Oreste Piccioni, who is suing him in connection with the Nobel Prize-winning discovery of the antiproton. He asked me to explore my files for possible material, which I said I would do.

Berkeley  
XXXXX

July 5, 1972

Rear Admiral D. S. Fahrney, USN (Ret.)  
Secretary, Committee on Science and the Arts  
The Franklin Institute  
Philadelphia, Pennsylvania 19103

Dear Mr. Fahrney:

This is in reply to your letter of June 23, 1972, requesting my nomination of a candidate for receipt of The Franklin Medal.

I wish to nominate Albert Ghiorso, Director of the Heavy Ion Linear Accelerator (HILAC) at the Lawrence Berkeley Laboratory, for receipt of The Franklin Medal.

In the past thirty years, Albert Ghiorso has made outstanding contributions to our knowledge of the transuranium elements, particularly on methods of synthesis and nuclear properties. Some idea of the magnitude of his accomplishments can be obtained from the following bare listing of his contributions.

1. He was an important participant in the discovery of all transuranium elements 95 through 105; namely, of americium, curium, berkelium, californium, einsteinium, fermium, mendelevium, nobelium, lawrencium, rutherfordium, and hahnium. In the case of the last half of this list, he was the organizer and leader of the effort which led to the first clearcut results.
2. He was a direct participant, and in many instances the research leader, in investigations leading to the first identification of dozens of nuclides of the following group of elements: uranium, neptunium, plutonium, americium, curium, berkelium, californium, einsteinium, fermium, mendelevium, nobelium, lawrencium, rutherfordium, and hahnium.



D. S. Fahrney

- 2 -

July 5, 1972

3. He was a direct participant in the discovery of numerous nuclides in the group of elements lying between lead and uranium.
4. He was a partner in the investigation of several families of  $\alpha$ -emitting isotopes collateral to the decay chains in the natural radio-elements.
5. He was a pioneer in the codification of data on alpha decay energies and the establishment of decay energy "systematics" for use in the prediction of properties of unknown nuclei.
6. He participated in the measurement of the half-lives for spontaneous fission of numerous nuclei and the elucidation of systematic trends in half life with nuclear type which have proved of great value in the prediction of nuclear stability for very heavy nuclei.
7. He made many contributions to instrumental techniques for measurement of alpha particle energies, spontaneous fission rates, and neutron fission cross-sections.
8. He was a pioneer in the synthesis of transuranium elements by nuclear reactions induced by complex nuclear projectiles such as accelerated ions of carbon, nitrogen, oxygen, neon, etc. He developed the techniques involved in such reactions to a fine art and they now form the almost exclusive basis for extension of the periodic chart of the elements.
9. He was an important contributor to the design of the Berkeley Heavy Ion Linear Accelerator and to its successor, the SuperHILAC.
10. He had the original concept of the Bevalac, a proposal for the introduction of heavy ion beams from the SuperHILAC into the Bevatron in order to achieve acceleration of heavy ions to enormous energies. The Bevalac is expected within a few years to open up entirely new fields of research in high energy physics and nuclear chemistry as well as in biology and medicine.

This is only a partial list of Albert Ghiorso's research accomplishments. It is important also to call attention to the important role he has played as the Director of the HILAC accelerator and as the imaginative thinker (together with

D. S. Fahrney

- 3 -

July 5, 1972

Robert Main) and driving force behind the effort to reconstruct the HILAC into the improved SuperHILAC. This machine, which will be ready for operation late this summer, will eventually accelerate ions of representative elements from all parts of the periodic system to energies of 8.5 Mev per nucleon. These beams will provide American scientists with a golden opportunity to be the first in the world to test the theoretical prediction of a new region of elements in the vicinity of element 114 with sufficient stability for an extensive study of their chemical properties.

Albert Ghiorso is a natural and energetic leader. He is internationally known and respected for his contributions to the chemical elements and to accelerator development and use. There is every indication that he will continue to be an outstanding contributor to these fields for many years to come.

It is a pleasure for me to submit his name in nomination for the Franklin Medal.

Sincerely yours,

Glenn T. Seaborg

GTS/sms

Wednesday, July 5, 1972 (con't)

At noon, I picked up Bob Thorne at the AEC SAN Office and drove to the Claremont Country Club for lunch. He wanted to discuss with me a number of problems connected with the management of LBL. He has grave doubts about the ability and role of Dick Connell and said that these doubts are shared by Bob Hollingsworth and others at the AEC in Washington, as well as John Perkins. He also expressed misgivings about the abilities of Bob West and indicated that he didn't carry much weight with the SAN office or the AEC. He wondered whether, in connection with the management of LBL, it might not be worthwhile having an outside review, such as is being planned by AUI for Brookhaven National Laboratory and Union Carbide for Oak Ridge. I thought that a review of some kind was necessary, but said I wasn't sure that an outside outfit could do the job wisely, and I wondered whether some kind of inside review under the auspices of Vice President Perkins might not be better. Thorne is going to talk to Perkins about this and he thought Perkins might get in touch with me. Thorne asked whether I would be willing to take over the directorship and I replied that I would not but that I might consider filling the job for a period of six months in order to effect the drastic reorganization that is needed.

Thorne said that he had talked to Van Dyken and others at Washington AEC headquarters about getting more support for the SuperHILAC program. They indicated that it might be possible for Kolstad to support part of the program; also, the possibility was raised of having the Physics branch of Kolstad support the 88" cyclotron, thus releasing more funds for the SuperHILAC. He stressed that the AEC was very anxious to effect further support for this program. I told him about Bob Epple's discussion with Earl Hyde, which has resulted in a rearrangement of funding levels within the Nuclear Chemistry Division in order to add more to the SuperHILAC budget. He suggested I talk to Van Dyken and Kolstad directly about this. I said that George Pappas was working with me on a way of allocating the funds from the Physics branch that would be satisfactory to Kolstad, who wants some direct control.

Thorne told me that the plans are underway to move the AEC SAN office to three floors of the new Bank of America building on the corner of Shattuck and Center. When I dropped him off at the SAN office, I went in and looked over my Washington material that is being stored there in the secret files. Kay Fricken helped me find some of the unclassified material to bring up to my office.

When I returned to LBL, Hyde reported to me on the Associate Director's meeting at which there had been a spirited discussion about Bob West's position. It was finally decided that he would serve as an Assistant to Director McMillan, responsible for general plant projects, even though this was opposed by Bill Wenzel and only supported in a lukewarm manner by Hyde; the other Associate Directors supported the appointment.

I met with Frank Asaro and two of the three persons who are at LBL this summer under the Summer Facility Program for minority colleges: Professor William M. Willingham from Langston University in

Langston, Oklahoma, and Professor Ernest Baca from the college of Santa Fe in New Mexico. They told me about their teaching programs at their respective colleges.

I talked by phone with Frank Giunta, Retirement Counselor, Statewide Personnel Office, about my retirement status; he will explore this with me further.

Thursday, July 6, 1972 - Berkeley

At 10:00 a.m. I dropped in to see Silva (who has returned from his vacation), Liljenzin, and Kratz about progress on our extraction chromatography procedures.

Emilio Segre came in at 10:30 a.m. to discuss the suit by Piccioni against him and Owen Chamberlain. Piccioni claims that he provided the key ideas for the apparatus use in the antiproton experiment and that he was cut out from participation. He says that he hasn't raised the question until recently because he was afraid that Segre and Chamberlain would prevent him from working at LBL or any AEC installation if he did so. Segre asked whether I would be willing to make an affidavit refuting the plausibility of this assertion, and I said I would if needed. We also reviewed the circumstances concerning my nomination of him for the Nobel Prize and the role that Ernest O. Lawrence played in this, which is important because of a letter that Piccioni wrote to Lawrence in October 1955 protesting his treatment in connection with the antiproton.

The Program Committee of the Nuclear Chemistry Division held its regular bag-lunch meeting in my office from 12:00-1:00 p.m. Those present were Cerny, Edelstein, Glendenning, Hyde, Shirley, Street, Templeton, and Thompson. Earl announced that Doral Buchholz retired on June 30 and that Eileen Eiland has taken over her position.

Earl briefed the committee on some of the crises that had occurred during the recent vacation period. In response to Spofford English's request for immediate information on the heavy ion physics work, a statement has now been drafted which basically shows that all of the research in the SuperHILAC and other programs is vastly significant to, and directed toward, such physics. He reviewed the budget crisis. There will be a 3-5% reduction in all research accounts in order to increase the SuperHILAC account. Earl recounted his conversation with Bob Epple at the Gordon Research Conference last week; the AEC will expect us to trim our other programs to indicate our support of the SuperHILAC. Earl notified the committee that he is taking part today in the formal hearings in Building 90 concerning Mathilde Kland-English's charge of discrimination against her in connection with her recent layoff. Earl described the discussion about Bob West's position, which has now been announced as Assistant to Director McMillan responsible for general plant projects.

We discussed the matter of review committees. Our position has been that we want to wait to see how the Townes Committee works out before setting up anything else. It was suggested, in reply to another request for action from Spofford English, that we write that the Townes Committee is fresh, has this responsibility, has been

holding reviews, and that we are awaiting word. If we find that the Committee review is not enough, then we will proceed to another plan. I again asked the Program Committee members to provide names of people who might be on such a review committee if we are asked for suggestions. We reviewed the status of the summer programs that have now been launched.

I called Professor Andrew Streitwieser in response to his letter of June 20 to indicate that we would be happy to have him participate more formally in LBL as a Participating Guest and described to him the conditions. I then called Norman Edelstein to report this conversation.

At 4:30 p.m., I met with Professor Jerzy Neyman, J. Hammersley (summer visitor from England), Michael Kasha, and Ann Soengen of the Committee for Arts and Lectures in Neyman's office, 401 Evans Hall, to discuss the arrangements for a lecture series in connection with the Copernican 500th birthday anniversary. We decided that the lectures would be held on Monday afternoon, July 31.

Helen picked up Steve and E. Coli at their Davis apartment and drove them home to Lafayette, arriving about 5:30 p.m.; they will stay until Saturday. He is in the middle of summer quarter and quite blue because Lois Stein hasn't agreed to be his girlfriend.

Suki and I took a hike to the water tank. Lynne dropped by in the evening. Steve is planning to drive back to Lafayette, Indiana with her next month. Bill started the summer quarter at Hayward yesterday and won't be finished until the start of the fall semester at Purdue; so he will fly back a few weeks after Lynne's arrival there.

Friday, July 7, 1972 - Berkeley

Ted Sherburne called me at 9:00 a.m.; he said that Jerry Tape doesn't want to serve as chairman of the committee to make recommendations on a new mission and objectives for Science Service because he is overcommitted. Ted asked if Bowen Dees would be satisfactory, and I thought he would be fine if he is willing.

I met with Frank Giunta of the Statewide Personnel Office from 10:30-11:30 a.m. to discuss the intricacies of my contributions to the University of California Retirement System and the alternatives presented by opportunities to pay into the system to make up for my leaves of absence. It appears that making back payments for the time I was at the University of Chicago in 1942-1946 may be possible and worthwhile.

Just before noon, I went up to the HILAC Building to confer with Al Ghiorso and Bob Main about the budget for the operation of the SuperHILAC. I told them that we are going to add \$180,000 to the \$1,280,000 as a result of the talk that Bob Epple had with Earl Hyde and that this money would be raised by cutting the other programs in the Nuclear Division. We also talked about the need for a large proportion of the \$525,000 of Accelerator Improvement Program (AIP) funds and decided to ask McMillan for about \$380,000 of this.

I had lunch at the table outside the cafeteria with a group that included Ronald Cavell who is just finishing his year's postdoctorate study with Shirley on the ESCA program. He is a Canadian and on leave from the University of Alberta. Also present were Andree and Jean Gizon from Grenoble, Dirk Benson, an American, and Michael Maier from the University of Munich--all postdocs here for about a year with Diamond and Stephens on the Coulomb excitation process.

I called Dick Frankel at 2:45 p.m. He told me that Kevex has won an IR-100 Award for the thyroid scanner. In a conversation about their analysis of GEOMET for me, he brought Quentin Koller on the line. They are still gathering information; there is nothing favorable or unfavorable at this time, but there are a number of unanswered questions. Dick noted that in comparing GEOMET with Kevex, the latter's earnings record is much stronger--size is Kevex's main drawback right now. He said that we grossed \$1.4 million this year and anticipate \$1.7-2 million next year.

Jack Hollander dropped into my office at 3:30 p.m. and told me about his meeting yesterday with Senator John Tunney in Los Angeles to discuss the energy dilemma. A number of representatives of industry were present. He extended, on my behalf, an invitation to the Senator to visit LBL which Tunney accepted for August.

Wally Costa called to make a progress report on the planned meetings about obtaining hiking rights for Lafayette Ridge and other trail areas. He said that there is going to be a meeting in Supervisor Jim Moriarty's office on Golden Gate Way in Lafayette at 4:00 p.m. on July 21 which he will attend. This meeting will include many of the people that he and I will meet with in respect to Lafayette Ridge. He will try to make arrangements at that time for a subsequent gathering to discuss the Ridge rights.

Suki, E. Coli and I took a hike to the water tank. Harvey Chinn had dinner with Dave at our home, after which they went to a movie in San Francisco. Lynne and Bill came for dinner, then they and Steve went to a movie in Berkeley.

Saturday, July 8, 1972 - Lafayette - Salt Lake City

Helen and I drove to the San Francisco Airport where I boarded United Airlines Flight No. 376 which left at 7:45 a.m. and arrived in Salt Lake City at 10:00 a.m. Helen's flight (Western No. 690) didn't take off due to an electrical problem; so she came on a later flight (Western No. 94) which left at 1:30 p.m. and arrived at 3:40 p.m. (In order to ensure that our children have someone to care for them, we have developed the practice of flying separately.)

I was met by Henry and Winifred Eyring who took me sightseeing. We drove to the Great Salt Lake where we visited Silver Sands Beach. We then went on past the town of Magria to the Bingham Copper Mine operated by the Utah Division of the Kennecott Copper Company. Just beyond the remains of the old town of Bingham, we came to the huge open copper mining pit which appeared to be some miles in diameter; this is a sort of reverse bowl with tiers of rods on which trucks bring the copper ore out. We then drove to Hotel Utah where I checked

Saturday, July 8, 1972 (con't)

into Room 632. I watched Senator George McGovern on TV at the Miami Beach Airport at 1:00 p.m. I received a basket of fruit from the Hotel Vice President, "Hank" Aloia, and Director of Sales, Patricia R. Maybach.

I went up to the Skyroom on the 10th floor of the hotel to join the American Academy of Achievement group at lunch. I ate with Mr. and Mrs. William Patterson and Xenon Hansen (chairman of Mack Trucks). I then went down to the Lafayette Ballroom on the mezzanine to attend Symposium #5. Here I talked to Nina Tabachnik, first place winner at this year's Science Talent Search, and met her parents. The first speaker was Helen Hayes, who said the best success that a girl can have is to be the wife of a successful man. The mayor of Kansas, H. R. Bartle, spoke about his parents, upbringing, his life in general, and about the value of love and constructive speeches in politics. Alexander de Seversky, in his question period, spoke against SALT because he thinks it gives advantages to the Soviet Union over the U.S. Wayne Newton made some attempts at humor, then answered some questions on his horses, dieting, Indians, singing career, etc. Akio Morita, President of Sony Corporation, spoke on his company, which he established in 1946 with \$500, and described how they coined the universal word "Sony" as their company name. I talked to Lowell Thomas and learned that the American Academy of Achievement is pretty much a one-man operation--Brian Reynolds.

Helen arrived at the Hotel Utah at 4:30 p.m. We took a walk up to the Utah State Capitol and visited Beehive House which was built in 1852 and is a place where Brigham Young lived. When we returned to our room, we found a record of "23 All-Time Favorites By America's Most Famous Choir," the Mormon Tabernacle Choir Album, and explanatory pamphlet, a gift of Isaac M. Stewart, President of the Choir.

We changed to our formal clothes and walked to the nearby Salt Palace where we attended the Banquet of the Golden Plate. Here the American Academy of Achievement presented Golden Plate Awards in a Salute to Excellence to each of 50 national guests of honor, Golden Eagle Awards for Promises of Greatness (about 10), and Golden Scroll Awards (more than 100) to high school students. There were about 150 seated at the huge U-shaped head table and about 800 in the audience. Helen sat at a table with Mrs. John W. Rollins (of Wilmington, Delaware), Dr. Gerald R. Clark (a psychiatrist and President of the Elwyn Institute, Pennsylvania), Mrs. Calvin L. Rampton (wife of the Governor of Utah), and Mrs. Phil Esposito (wife of the Boston Bruins hockey star). I sat next to Harold Schafer (of Bismark, North Dakota, and chairman of Gold Seal Co.) and Major Alexander P. de Seversky, and near Rosalind Russell and her husband Frederick Brisson.

Lowell Thomas served as Master of Ceremonies and Tom Perryman (a TV personality from St. Louis) read the individual citations and introduced the Golden Plates awardees. The actual presentations were made by a number of individuals and were preceded by short remarks of welcome by Governor Calvin L. Rampton and Salt Lake City Mayor Jake Garn and the presentation of the Academy's first annual "Gold Medal for Extraordinary Service" to Maurice Warshaw (President, Grand

Central, Inc., Salt Lake City), 1972 "Salute to Excellence" Chairman. Each of the awardees made short responses. In mine I paid special tribute to the young people who were being honored; some of these were Science Talent Search participants whom I had met in Washington in May. Each awardee received, besides a glass-enclosed Golden Plate mounted on velvet, a gold-plated medallion with a ribbon for hanging around the neck, and a souvenir album with name engraved on the cover.

As well as those mentioned above, people we met included the Edward C. Carlsons (President, United Airlines), Frederick C. Crawford (civic leader, Cleveland), Marriner S. Eccles (former chairman of the Board of Governors, Federal Reserve System, now chairman of First Security Corporation, Utah Construction), the Robert L. Fleischers, (General Electric Research physicist who won the 1971 E.O. Lawrence Award), actor Peter Graves, William P. Lear (LearJet, Reno), Donald H. McLaughlin, Maurice B. Mitchell (Chancellor, University of Denver), George E. Mueller (Chairman, System Development Corporation, Santa Monica), Wendell Phillips (Phillips Oil), Gilbert F. Richards (President, the Budd Company), Willard F. Rockwell, Jr. (North American Rockwell), Albert Starr (University of Oregon Medical School), W. Clement Stone (Chairman, Combined Insurance Co. of America, Chicago), the J. Williard Marriotts, the Jesse R. Smiths, and the Earl Gagosians.

Other Golden Plate Awardees who were present but whom we didn't have a chance to talk to were Maurice Abravanel (Conductor, Utah Symphony), Henry Barre (Professor of Agricultural Engineering at Ohio State), John Burkhart (past president of Indianapolis Chamber of Commerce), Frank Capra (Hollywood director), Hernando Courtright (Executive Director of the Beverly Whilshire), Allan V. Cox (Stanford geophysicist), George S. Eccles (President, First Security Corporation, Salt Lake), Phil Esposito, Frank L. Goffio (Executive Director of C.A.R.E), Enrique H. Gutierrez (Chairman of EHG Enterprises, Puerto Rico), Dr. Howard P. House (President, Otologic Medical Group of Los Angeles), Robert Trent Jones (golf course architect), Penny Kaniclides (President of Telstat Systems, New York), Mitchell P. Kartalia (President of Square D Company), Stefan Lorant (historian), Dan W. Lufkin (first Commissioner of Connecticut's new Department of Environmental Protection), William R. Mason (President, the Irvine Company), Ralph J. Menconi (sculptor), Elmer Rasmusson (former mayor of Anchorage), Anthony T. Rossi (President of Tropicana Products, Florida), N. Eldon Tanner (President, Mormon Church), and William Thayer Tutt (former President of the International Hockey Federation).

After the dinner, Helen and I walked with the J. Willard Marriotts and the John Rollinses to the Royal Inn, where the Earl Gagosians hosted a reception. We talked with a number of the guests and walked back to the Hotel Utah afterward.

Sunday, July 9, 1972 - Salt Lake City - Lafayette

Helen and I had breakfast in the Hotel Utah Coffee shop, then took a taxi to the Salt Lake City Airport. Here we boarded separate flights and joined up at the San Francisco Airport at 11:00 a.m. and drove home to Lafayette. Don McLaughlin was on the same plane as Helen both going and returning.



In the afternoon, Lynne came over and she, Eric, Suki, Bessie and I took a hike around the periphery of the Lafayette Reservoir, a distance of about 5 miles which took us 2 hours to cover. Lynne had dinner with us and afterward we all listened to the record, "Adlai E. Stevenson, The Voice of the Uncommon Man," which Eric had given me as a Father's Day present.

Monday, July 10, 1972 - Berkeley

At 9:30 a.m., I met at the HILAC Building with Ghiorso, Silva, Liljenzin, Kratz, Nurmia, and Nitschke. We discussed how target arrangements and recoil collection mechanisms might relate to chemical procedures to study the chemical properties of elements 104, 105, 106, and so forth, as well as the superheavy elements. We discussed the use of multiple targets and gas jet procedures for recovering reaction products through the use of the present rabbit setup, tubing, glass barrel setup, porous glass frits, filter paper, tape systems, electrolysis, gaseous chromatography, etc. We decided that next to the present rabbit system, the use of glass frits should be the most useful and that we will concentrate on this. In order to test their efficacy, we will try to make arrangements for some bombardments with the Oak Ridge cyclotron or possibly our 88" cyclotron.

I had lunch at Larry Blakes with Lynne, after which we did some rummaging in bookstores on and near Telegraph Avenue.

Hulet Hornbeck called in connection with an item in this morning's local papers which arrived on my desk only moments before. The article concerns the threat of radiation in the East Bay Regional Park District in the area of Camp Parks and states that I am to advise them of any potential danger. (I had been alerted to the problem but not formally approached as yet.) Hornbeck outlined his correspondence with William White of the Stanford Research Institute. In answer to his queries, I indicated that I thought it would be appropriate for me to be involved. I told him that I was interested but that as a first step I ought to go out to Camp Parks and look it over. I then called Bill White and arranged a visit there on Thursday morning.

Suki and I took a hike to the water tank. I watched the opening of the Democratic National Convention broadcast from Miami Beach.

Tuesday, July 11, 1972 - Berkeley - San Francisco

I wrote to James Lilienthal at Los Alamos that I would be glad to serve on the ad hoc committee for the review of the Boy Scouts of America Atomic Energy merit badge (copy of correspondence attached).

I met from 9:00-9:45 a.m. with Ghiorso, Nitschke, and the Alonsos in the conference room of the HILAC Building in what will be a weekly planning session. The first experiments with argon ions, which will be used to project gold nuclei into SASSY, will perhaps start this week. Following this, the next experiments will probably use krypton ions--for example, in the bombardment of ytterbium to try to produce and identify isotopes of element 106.

110D to 200 Lillienthal, J.R.  
300 American Nuclear Society  
ad hoc committee

174a

Berkeley  
XXXXXX

July 11, 1972

Dr. James R. Lillienthal  
Los Alamos Scientific Laboratory  
P. O. Box 1663  
Los Alamos, New Mexico 87544

Dear Jim:

This is in reply to your letter of July 6, 1972. I'll be glad to serve on the ad hoc committee for the review of the Boy Scouts of America Atomic Energy merit badge. I must make the proviso that I will not have much time to devote to this.

I enjoyed very much sitting next to your daughter Ann, and can assure you that she is a very self-sufficient girl who didn't need very much help.

With best regards,

Cordially,

Glenn T. Seaborg

GTS/sms



**AMERICAN NUCLEAR SOCIETY**

244 EAST OGDEN AVENUE / HINSDALE, ILLINOIS 60521 USA

**PRESIDENT**  
 JAMES R. LILIENTHAL  
 LOS ALAMOS SCIENTIFIC LABORATORY  
 P.O. BOX 1663  
 LOS ALAMOS, N.M. 87544 USA

July 6, 1972

Dr. Glenn T. Seaborg  
 University of California  
 Lawrence Radiation Laboratory  
 Berkeley, CA 94720

*AS 7/10/72*

Dear Glenn,

The ANS has offered to assist the Boy Scouts of America by making a critical review of the requirements for earning the Atomic Energy merit badge.

The ad hoc committee to make the review will consist of Michael S. Terpilak, Chairman, Saul Harris, and W. Herbert Pennington. Your name has been most often suggested as the fourth member of this committee.

I would be pleased if you would accept this appointment as I know your knowledge and stature would give excellent support to the work of the committee. If you can accept, I will so inform Mr. Terpilak and he can let you know the planning for the task.

My daughter, Ann, is still in California. I understand she was so excited to see her big sister that she neglected to introduce you or thank you at the San Francisco airport. But I thank you for keeping an eye on her.

Sincerely,

*James R. Lilienthal*

James R. Lilienthal

JRL:nb  
 XC: M. S. Terpilak

Tuesday, July 11, 1972 (con't)

After the meeting, Ghiorso and I talked to Diana Lee, one of Professor Markowitz's graduate students, about chemical experiments that she might perform with the SuperHILAC program. I then took her to room 203 and introduced her to Silva, Liljenzin, and Kratz, so that she could become acquainted with their program. I invited her to attend the Friday morning SuperHILAC research planning sessions.

At 10:55 a.m., I made some welcoming remarks to the orientation session of the Summer Undergraduate Program in the conference room of Building 70A. I told them my main reason for talking with them today was to meet them; I went around individually to learn their names and connections and met: Stuart Allison (University of Montana at Missoula), Barbara Baird (Knox College, Decatur, Illinois), Linda De Lucia (Wagner College, Staten Island), John Dwyer (DePauw University, Grand Rapids, Michigan), Sanford Finck (UCLA), Berry Goldstein (Union College, Schenectady, New York), James Hagen (Gonzaga University, Spokane, Washington), Regina Hillsman (Bryn Mawr, Pennsylvania), Matthew Platz (State University of New York, Albany), John Ruark (University of Redlands), and Gregory Sawyer (USC). I told them that the program was primarily to give them an opportunity to learn, but said we would like at least some of them to come here to do their graduate work. I said that I might join them occasionally at their Tuesday luncheons in the cafeteria. I also gave them a very brief rundown of the history of LBL and the Nuclear Chemistry group.

At 11:00 a.m., I rode over to the Fairmont Hotel in San Francisco with Benito Rose, who works as a clerk for PG & E and who is serving as a substitute driver (his sister is a pre-med student at Berkeley). At the Fairmont, I was met by Charles Sedam who escorted me to a suite on a top floor of the Fairmont Towers, where I attended a reception with a number of the head table people and others.

We then proceeded down to the Grand Ballroom where I sat at the head table with C. Gordon Sparrowe (PG & E), Chairman, San Francisco Chapter of the Power Engineering Society; Mr. Eugene C. Sakshaug (Manager of Surge Arrester Engineering, General Electric Company, Pittsfield, Mass.), Prize Paper Award Winner; Rev. Ettore de Giammaso, National Chaplain, Military Order of World Wars; Mrs. Frank Smith, daughter of William D. Coolidge, accepting the Power Life Award; Hon. John P. Vukasin (Calif. Public Utilities Commission), past Chairman and Afternoon Symposium Speaker; Mr. Howard C. Barnes (Asst. Vice President--Engineering, American Electric Power Service Corporation) President, Power Engineering Society; Mr. John E. Barkle (Project Manager, Bechtel Corporation), General Chairman of the 1972 Summer Meeting); Shermer L. Sibley (President and Chief Executive Officer, PG & E), Executive Chairman, 1972 Summer Meeting; William G. Meese (President and Chief Executive Officer, Detroit Edison, and Chairman of the Electric Research Council), Afternoon Symposium Speaker; Mrs. Barkle; Hon. Elizabeth V. Hallanan (Chairman, Public Service Commission, State of West Virginia), Afternoon Symposium Speaker; Robert W. Flugum (Director of Applied Research, Ohio Brass Co., Wadsworth, Ohio), Prize Paper Award Winner; and Elwyn G. Lambert (Supervising Electrical Engineering, PG & E), Past Chairman, S. F. chapter of the Power Engineering Society.

About 300 people attended the luncheon. J. E. Barkle served as General Chairman and made the opening remarks. He then called on Shermer Sibley, who made some welcoming remarks in his capacity as Executive Chairman. He then introduced Howard C. Barnes, who presented the Prize Paper Awards. Sibley then introduced me, and after some introductory remarks describing my family's reaction to our going to Washington and the family vote against this move upon President Kennedy's call, I gave my prepared talk, "Energy and Our Future." At the end of my talk, I had to stand up for a prolonged ovation.

After the luncheon, I was interviewed on tape for KSFO Radio by newscaster Aaron Edwards, who asked questions about the need for energy in the future, the various types of energy, and the safety of nuclear power. Drew McKillips of the San Francisco Chronicle asked me about my suggestion that the AEC be transformed into the U.S. Energy Agency, and I described to him in general my recent editorial in Science. I gave a copy of my remarks to R. B. Marxheimer, Professor of Engineering at San Francisco State College. He wants to reproduce it for use in some student publication. I rode back to my LBL office with Benito, arriving at 2:40 p.m.

Dick Frankel called at 3:00 p.m. to tell me that he, Rolf Woldseth, and others had spent the morning and lunch with Dr. Stanley Flatte of the Alvarez group, discussing the possibility of marketing their liquid xenon radiation detector as a competitor to the Anger camera for use in hospitals. He said that Alvarez, Haim Zaklad, and others have the patent, with rights to the patent conferred to them by the AEC and the university; I expressed some doubt that this would have been feasible. Frankel suggested setting up maybe a separate corporation with a chief executive officer, expert in management, and supported by \$40,000 of Kevex money to handle this--about \$1.5 million would be raised to support the operation, and Kevex would have 25% interest. Dick and Rolf Woldseth will come over the week after next to make a further evaluation of this.

Sam Markowitz came in at 3:30 p.m. to tell me that he had just today learned of his promotion to full Professor in the Department of Chemistry. He wanted to share this with me because, he said, I had had a great deal to do with his decision to come to Berkeley. I congratulated him and, as a coincidence of timing, conferred on him his pin for 10-year service in LBL.

I watched part of the Democratic Convention on TV. The McGovern platform carried intact.

Wednesday, July 12, 1972 - Berkeley

Catherine Borrás and William Bevan called me at 9:00 a.m. to say that they have arranged for Leonard Rieser, Bill and me to meet with the Council of Americas on July 19. The Council is the body of American corporations that have economic interests in Latin America. Bill's AID contacts suggested that in addition to my contacting individual organizations for financial support for the Mexico City meetings, we do an organizational overview with the Council first. We discussed related AAAS business.

Wednesday, July 12, 1972 (con't)

Earl Hyde and Jack Hollander came in at 9:10 a.m. We decided to invite Congressman Mike McCormack to visit LBL on the basis of the piece about him in the July 1972 Physics Today, in which it is stated that he is deeply involved in the subject of energy. We also agreed that Jack or Larry Ruby will send the letter to Milt Shaw proposing an LBL project to study the possibility of undergrounding the demonstration fast breeder reactor. We agreed that Jack would invite John Cooper of the Battelle Northwest Laboratory to visit us with the view of determining whether he should be invited to assume the position of Group Leader for Environmental Chemistry under Jack in the Energy and Environment Program.

I met with Mark Ruben and Ken Peterson of the UCLA Daily Bruin, who tape-recorded an interview with me. We had a broad-ranging interview on energy, the need for it, various sources, the role of nuclear power and its hazards, etc. There was also some discussion of my duties at Berkeley and my general role with the Presidents in Washington. I gave them copies of my speech "Energy and Our Future," emphasizing my editorial in Science. I also gave them each a copy of my booklets Nuclear Milestones and Peaceful Uses of Nuclear Energy.

I had lunch in the lower level of the cafeteria with Dick Diamond, Norman Edelstein, Jerry Bucher, Klaus Halbach, and two visitors from the German Julich Laboratory--Professor Meyer-Borricke and Dr. Reich. Meyer-Borricke told me about the isochronous cyclotron which is now beginning to operate at Julich and some of the experiments on high spin states and so forth that they are doing with it.

I met with Earl Hyde and Dave Shirley at 1:30 p.m. to discuss the matter of computer time for Fritz Schaefer. We agreed to allot him 100 hours of time on the 6600 computer. I also brought up the matter of the space in Building 73 which involves Hadeishi. We resolved that he would give up half of the space in the wing where he is situated and the near office.

Arthur Poskanzer brought Robert Klapisch to see me at 2:00 p.m. Klapisch works at Orsay and may be their next Director. He is visiting here to work with Poskanzer in the write-up of some of their collaborative work. He told me that Claude Stephan at Orsay has isolated from galena ore in a mass spectrograph samples at mass number 298 and higher, such as 305, which undergo fission with neutrons. This may be due to a superheavy element or to some artifact.

Sam Markowitz came in at 2:50 p.m. to introduce me to Dr. Monika Hille, an Austrian in the Nuclear Physics Department at the Technical Institute of Munich.

Norman Edelstein brought Andrew Streitwieser into my office at 3:30 p.m. We agreed to allocate him 5 hours of 7600 computer time.

Albert Ghiorso and I met with Edwin McMillan in his Director's Office from 4:00-4:30 p.m. to impress upon him the urgency of allocating a major share of the Accelerator Improvement Program funds to the SuperHILAC. We left with him a summary of urgent projects that would

be covered by such funds, for which the cost totals \$382,000. This gives rise to a problem because the entire AIP allocation to the Lab is only \$525,000 and the 88" cyclotron group is requesting \$200,000, and of course the Bevatron people will request a substantial amount.

I watched the Democratic Convention on television for a while. McGovern won the Presidential nomination on the first ballot.

Thursday, July 13, 1972 - Camp Parks - Livermore - Berkeley

Sheila met me at our home in Lafayette at 8:00 a.m. and we drove to Camp Parks, near the junction of Highways 580 and 680, arriving at the main gate at 9:00 a.m. We were met by William L. White, Assistant to the Vice President, Office of Research Operations, Stanford Research Institute; Dr. David Jones, radiation expert on the project; and Dr. John Krebs.

We drove to the headquarters farmhouse building, where we were given a briefing on the layoff of the radioactive source area surrounded by a cyclone fence, the outer perimeter area surrounded by a cattle fence, part of which constitutes a common boundary to the adjacent East Bay Regional Park District (EBRPD) land. This latter land (460 acres) was given to the EBRPD through President Nixon's "Legacies of Parks Program" which turns over surplus federal land for use as green areas and parks. We were joined by Jim Thomas of the Camps Parks staff.

We drove into the experiment area, passing through a gate at the perimeter fence. This fence is of the ordinary three-strand barbed wire type; signs are posted at every few hundred feet cautioning against the radiation field. Red-light warning beacons at the gates are operated when the radioactive sources are open. As indicated above, part of this fence is contiguous with the EBRPD property. We went to the control shack where we got an overall view of the radiation experiment facility. The four cobalt-60 radiation sources are manipulated, i.e., lifted out of their lead shielding, by remote control at this point.

We continued toward the center of the valley where the radiation sources are stationed. This area is surrounded by an eight-foot-high cyclone fence with three strands of barbed wire at the top. Signs reading "Danger/High Radiation Area Greater Than 0.1 R/HR" are posted every fifty feet apart and individually lighted at night. (0.1 R per hour means 100 mr per hour, but the highest exposure rate at the cyclone fence is now actually only 20 mr per hour.) Since the facility is not in operation during the summer, the four cobalt-60 radiation sources (600 curies each) were sealed in their lead shielding cases. Within this area are installed animal pens and a large area of white rocks lettered "Danger/Radiation" as an alert to parachutists in the vicinity.

The cyclone fence has about a 950-foot radius from the source. The additional distance from the cyclone fence to the park boundary is a minimum of 1200 feet--such a distance that the radiation exposure, when the cobalt-60 sources are in place, is in the range of 0.02-0.07/mr per hour. A person would have to remain at this perimeter

Thursday, July 13, 1972 (con't)

fence continuously day and night for about two months with the four sources in their exposed positions in order to get an accumulative additional radiation exposure per year equal to that of the ordinary background radiation. Such an additional exposure to radiation, while certainly not desirable, would not be particularly harmful, and the exposure attendant with a few hours' stay at this outside periphery fence would have completely negligible effects. The danger arises from the possibility of a trespasser deliberately passing through this outside fence, which is quite easy to do, and proceeding to the inside fence where the radiation for each five hours of exposure is about equal to that of a year's exposure to ordinary background radiation.

We proceeded from the experiment area through the gate, and after a short stop at the perimeter fence adjacent to the EBRPD land, we went onto the EBRPD land area, which consists largely of treeless rolling hills. The only present entry for the public to the EBRPD Camp Parks area is by driving through the Santa Rita Rehabilitation Center from the south, which presents a rather obstructing but quite possible entry. A longer-range entry for the public will presumably be from Tassajara Road to the east, via an entrance road across a creek and over a distance of a few hundred yards to the park land.

We continued up a hill within the park land, but near a corner of the experiment facility, to a Communications Satellite Tracking Station which is operated by Lockheed for the Air Force. The main station is enclosed within a cyclone fence topped by barbed wire. We met some of the people working there, with John Meyer serving as their spokesman. They expressed some concern about the security of their facility if it is located within a public park area, but felt that this was a manageable problem.

We noticed within the EBRPD Camps Parks property a number of side-hill cave-like structures which we were told had served as storage areas for high explosives, and which obviously could have the potential of serving as "attractive nuisances" of some potential danger for youngsters visiting the park area.

At the end of our tour--for which we received the best possible cooperation from Mr. White and Dr. Jones, Dr. Krebs and Mr. Thomas--I asked Mr. White and Dr. Jones to furnish me the following information:

- (1) The capital cost for the construction of the entire installation as it now stands.
- (2) The current capital cost of building an equivalent replacement facility at another site.
- (3) The cost of building an eight-foot cyclone fence with barbed wire around the outside perimeter to replace the existing cattle fence.
- (4) The capital cost for such a cyclone fence for the common boundary area between the radiation facility and the



Thursday, July 13, 1972 (con't)

EBRPD Camp Parks property, with extension into the hills to make any access to the radiation facility inconvenient.

I was given a general map with details concerning the geographical arrangements of the cobalt-60 source center, cyclone fence, and the peripheral barbed wire fence, with indications of the radiations dose rates along the common fence boundary between the radiation facility and the regional park land.

Sheila and I proceeded out to the Lawrence Livermore Laboratory. We received very cordial treatment at the gate from Officer George C. Mangrum. We arrived at Building 219 just before 11:00 a.m. Chuck Jones escorted us to Building 119, where we met John Johnston who took us into the records vault. We went through my journals for the period January 1961 through December 1970 and removed all of the secret material. We asked Mr. Johnston to send the secret material to the SAN office for storage with the remainder of my secret files there and to send the expurgated version of the journal to my LBL office.

While we were working in the vault, Wilson L. Collins and Lawrence Kirshner came in. They took the "Q" clearance badge which had been issued to me at the AEC; I am to have a new one issued from LBL.

We worked from 11:00-2:00 p.m. at this, with time for lunch. Sheila had lunch in the cafeteria while I ate with Roger Batzel in his Director's Office on the fifth floor of the Administration Building. Our conversation was general, bringing each other up-to-date on our activities. I mentioned to Roger the importance of the collaboration we are carrying on with Ken Hulet in the search for the superheavy elements at the SuperHILAC. I indicated that the financial help that they are giving us to pay for some experiments of interest to Hulet and LLL (amounting to over \$100,000 for FY73) is of crucial importance to us and also said that any possible increase would be appreciated.

After completing work on the files, Sheila and I drove back to our LBL offices, passing the Orinda property on the way. While we were standing on Lomas Contadas Road, some friends of Sheila's drove by--Roland and Greta Gangloff. He is a doctoral student in Paleontology at Berkeley. She is a science teacher at Adams Junior High School and was in charge of the judges group in which I participated at the S.F. Bay Area Science Fair on March 16.

This was a record-breaking day in heat waves; it was reported to have been 115° at Livermore. Helen drove Eric and Scott "Hodgie" Alexander to Yosemite National Park today; she left at 8:30 a.m. and returned at 6:00 p.m.

After dinner, Dianne and I went over to the home of a neighbor, Jackie Peregoy, to attend a political meeting, co-sponsored by Cathy Hendricks, another neighbor. The get-together was to introduce Mike Tripp, a Lafayette resident and Democratic nominee for State Senate running against the Republican incumbent John Nejedly. I met Mike, Assemblyman John T. Knox, and a number of our neighbors. Tripp is a

tax lawyer and in his remarks indicated that he will emphasize tax reform--perhaps going so far as to eliminate taxes on single family residences. He spoke rather well. Assemblyman Knox also spoke and mentioned his recent demand that the BART management be investigated with respect to their handling of finances.

I watched the proceedings of the Democratic Convention on TV. McGovern chose Senator Thomas Eagleton as his Vice Presidential running mate and he was nominated. Later, there were speeches by Eagleton, Ted Kennedy, and McGovern.

Friday, July 14, 1972 - Berkeley

I called Frank A. Long at Cornell University just before 9:00 a.m. in response to his letter of July 5 about my Science editorial, "For a U.S. Energy Agency." I indicated that I thought the move he suggests (defining the USAEC as a civilian agency, divesting it of any connection with military programs) would be retrogressive. I told him that the Department of Defense would be delighted to take over the entire military-related functions and explained that there had been more restraints on the DOD by virtue of civilian control being in the AEC than most people know. After much examination of the problem, I see no other way in which civilian monitoring of the DOD could be conducted. He said that he is not going to send his letter to Science as he does not know enough about the energy problem. He feels that, while my case is a very good one, he regards the civilian-military connections as incompatible in the same house. He would still like to see the total program turned over to the DOD, with increased means for making them accountable; I replied that I did not think one would get any cooperation from them, especially in test ban matters. I thought that we need a restraining mechanism of knowledgeable people from outside.

Long told me he has turned down the invitation from AAAS to run for President. He believes that next year will be a critical one for the program at Cornell and he would require several more months before he would be in a position to move out of that. I indicated my extreme disappointment and regret that I had not contacted him when I supported his nomination at the nominating committee meeting.

At 9:00 a.m., I attended a meeting of the Superheavy Elements (SHE) planning group. Present were Ghiorso, Silva, Kratz, Nurmia, Nitschke, Harris, Hulet, and Diana Lee. Silva described his experiments on the flow of He gas through glass frits with the absorption of the fission products of Cf-252. Liljenzin gave a short description of the chemical experiments on extraction chromatography and anion exchange resins he has been doing with Kratz. He was interrupted by the entry of a large group of HILAC people with a tray of sweet rolls and donuts, topped by candles, in recognition of Al's 57th birthday. Liljenzin finished his presentation, and then we went into the regular SuperHILAC Research meeting with many additional people.

This started with a "HILAC Hilites" report by Nurmia; he described the ANL, ORNL, and LASL proposals for heavy ion accelerators. Al feels these are all inferior to the present SuperHILAC. Silva told us about Druin's description at the June ORNL Conference on Heavy Ions of

the Dubna experiments with  $Xe^{+30}$  ions ( $^{136}Xe$ ) (maximum energy 900 Mev, max. intensity  $2 \times 10^{10}$  particles per second). With a  $^{238}U$  target they found one S.F. count in the actinide and 4-8 in the superheavy elements fractions--no conclusions were drawn. From the reaction of  $^{136}Xe$  on  $^{124}Sn$  they failed to see any S.F. from  $^{266}104$ ,  $^{259}104$ , etc. (cross section less than  $5 \times 10^{-33}$  cm<sup>2</sup>). At the end of the meeting, Al announced that both injectors are inoperative, so there will be no beam this week.

I had lunch with Dan Wilkes in the cafeteria. We discussed a number of items, including my AAAS Presidential address scheduled for the meeting in Mexico City next June, for which I will probably choose an international theme of some kind. I will nominate Dennis Flanigan, editor of Scientific American, for the ACS James T. Grady Award for Interpreting Chemistry for the Public. Dan is drafting the nomination to be sent to the ACS.

After lunch, I went with Ed McMillan up to the HILAC Building, where Ghiorso and Main conducted us on a complete tour of the Super-HILAC. After this, we again went over the matter of the urgent need for AIP funds, which McMillan understands very well.

Silva and I went down to the 88" cyclotron where we conferred with Joe Cerny about the possible use of one of the heavy ion beams there to test the use of glass frits for their applicability to the superheavy element chemistry program. It isn't clear whether the apparatus there is applicable, and Silva will investigate further.

Lynne dropped by and had dinner with us. She left Moses, one of Bessie's male pups, with Dianne for her to keep.

Saturday, July 15, 1972 - Lafayette

Jeanette and Ray visited us in the morning and through lunch. They are on their way to a vacation in their camper to Northern California, Oregon, Washington, and Canada, visiting Ray's relatives and our cousin Charles Seaborg and his family in Seattle. I worked in our yard all day and planted two Monterey Pines on the bank at the back, just below Thompson Road.

Sunday, July 16, 1972 - Lafayette

I spent a good part of the day working in our yard.

Monday, July 17, 1972 - Berkeley

I wrote to Congressman Seymour Halpern in response to his letter of June 27 about achieving world peace (copy of correspondence attached).

I called Bob Hollingsworth at 8:45 a.m. to ask him about the Bill Riley situation. Bob told me that Riley had been borrowing large amounts of money from people, including AEC employees, for the last four or five years without anyone talking about it. There was no indication of this until a few months ago when one person mentioned it to another and then it spread. Riley told him that the money involved

Berkeley  
XXXXXX

July 17, 1972

The Honorable Seymour Halpern  
U. S. House of Representatives  
2236 Rayburn House Office Building  
Washington, D.C. 20515

Dear Congressman Halpern:

I am pleased to respond to your letter of June 27, 1972, in which you request my opinion on the most effective formula for achieving a lasting world peace.

I believe that the greatest contribution can be made by increasing to a very large extent the exchange of people between all countries of the world. I have in mind an increase in the visits both short and long of people in all walks of life. This should be accompanied by a massive exchange of information. In my own field of science, this exchange of information has contributed to world peace, but I think this can be increased to a very large extent in order to further augment its effectiveness.

I am pleased to enclose an inscribed photograph as you requested.

With my warmest wishes,

Cordially yours,

Glenn T. Seaborg

GTS/sms

enc.

*copy of letter from H.L.*

SEYMOUR HALPERN  
6TH DISTRICT, NEW YORK

WASHINGTON OFFICE:  
2236 RAYBURN HOUSE OFFICE BUILDING  
WASHINGTON, D.C. 20515  
225-2336

DISTRICT OFFICE:  
89-31 161ST STREET  
JAMAICA, NEW YORK 11432  
858-0300

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

COMMITTEE ON  
FOREIGN AFFAIRS  
SUBCOMMITTEE ON  
INTERNATIONAL ORGANIZATIONS  
AND MOVEMENTS  
SUBCOMMITTEE ON  
ASIAN AND PACIFIC AFFAIRS  
SUBCOMMITTEE ON  
NEAR EAST

June 27, 1972

*1575 7/1/72*

Mr. Glenn T. Seaborg  
United States Atomic  
Energy Commission  
Washington, D.C. 20515

Dear Mr. Seaborg:

As one who greatly respects your outstanding talents, I would deeply appreciate your cooperation in connection with a project I have undertaken.

I am preparing a cross-section of opinions from the world's intellectuals on the most effective formulas for achieving a lasting world peace. I trust you will let me have the benefit of your views on this most important of subjects, and hope to hear from you at your earliest convenience. Your response will be most meaningful and I want to assure you of my profound appreciation.

I would also cherish an inscribed photograph of yourself which I might appropriately display and would feel most privileged if you would be kind enough to send one to me.

With many, many thanks and with all my best to you in all your endeavors, I am

Most sincerely,

  
Seymour Halpern  
Member of Congress

SH:a

Monday, July 17, 1972 (con't)

is in excess of \$100,000--the borrowed amounts ranging from \$4,000 to \$16,000. It appears to be related solely to his betting on horses. As of the moment they have no indication that there is any kind of blackmail or that it affected his job determinations. He indicated that it has been going on for quite some time although there has been an increase in the past two years. Bob suspended him the day this came out and notified the Joint Committee. It is now undergoing a thorough investigation, but they are not receiving complete cooperation from Riley. Bob suspects that he is also in difficulty with banks, household mortgages, etc.--he is in very deep and is through. We agreed that it is amazing that this had not reached the papers before now. I indicated that it had received substantial press out here and certainly didn't do the AEC any good. Bob responded that this has been painful to them but there is nothing they can do except deal with it on a factual basis.

I talked by phone with Herbert Brooks of the Compliance Office at SAN in connection with the East Bay Regional Park District's Camp Parks area. He told me that if the land is developed as a park site, the SRI license would have to be amended. They are set up at the present time for work at a remote area with no people around. We concurred that one of the first requirements would probably be constant surveillance when the radioactive sources are exposed. I asked if he thought it would be feasible or better if SRI moved the operation to a more remote site; he didn't know offhand what else is available to them, but reiterated that it is not good policy to have that sort of experiments adjacent to a park. He said he plans to call SRI this morning to see what their immediate plans are.

I called Dave Pickler, in Radiology at the State Department of Public Health, for his views on the SRI/Camp Parks facility. He noted that it is under federal jurisdiction and is, therefore, licensed by the AEC rather than the State--though the State can advise the Park District. He felt that certain changes would be in order to prevent children from getting onto the SRI experiment area. I replied that I thought something needs to be done--I'm not sure yet what it ought to be--but it should not be unmonitored to the extent it is now.

I had lunch with Milo Smith at the Faculty Club to discuss the inheritance tax situation of the Seaborg family. He gave me some tables to show the tax rates covering my estate level and described the value of a will which includes a spouse bypass provision. In this way, only one half of the estate is taxed upon the husband's death, with the wife's half set up in a trust for the children, thus avoiding having the estate taxed at a total of 1-1/2 times upon the wife's death. He also explained to me the value of having my life insurance owned by Helen, which is merely a matter of filling out the proper forms. He will draw up a will for us which covers the above.

At 5:30 p.m., I went to the Terrace Room at the Claremont Hotel and met with a number of people concerned with the East Bay Regional Park District (EBRPD) Citizens' Task Force Committee and Stewart Udall's Overview. Present were: Stewart Udall and Alvin Baum (Overview); Joseph Bort and Fred Cooper (Alameda County Board of Super-

visors); James Moriarty and James Kenny (Contra Costa Board of Supervisors); Joseph Bodovitz (Executive Director, Bay Conservation and Development Commission); Association of Bay Area Governments officers Don Dillon (President), Julian Baget (Executive Director), Lizette Wiess (Public Information Officer), Rudy Platez (Planning Director); Richard C. Trudeau (General Manager, EBRPD); and Bill Horne (Consultant, Citizens' Task Force).

We discussed the impending responsibilities of the Task Force. I had a good opportunity to talk to Udall and described to him our successful efforts on the Huckleberry Trail area acquisition, my ideas for an interconnected hiking trail including Lafayette Ridge, and so forth. Udall feels that a good deal can be accomplished with respect to maintaining green areas by zoning. When we got to talking about politics, he gave me his opinion that George McGovern has a good chance of beating Nixon if all the young and minority voters could be brought to the polls.

After the meeting, some of us went to Norman's Restaurant for dinner and continued our discussion of the role of the Citizens' Task Force Committee--particularly its first meeting tomorrow night (which I cannot attend). I gave Trudeau a copy of my preliminary draft report on my visit to the Camp Parks land.

Lloyd Rudholm, our long time gardener, came by our house this afternoon to start some work on the repair of our sprinkler systems, outdoor faucets, and to trim our mulberry tree.

Tuesday, July 18, 1972 - Berkeley - New York

I wrote Dixy Lee Ray in connection with her appointment to the AEC, which has been announced by President Nixon and now only needs confirmation by the Senate (copy attached).

From 9:00-10:00 a.m., I met with the SHE Planning Group--Ghiorso, the Alonsos, the Eskolas, Nurmia, and Nitschke--in the conference room of the HILAC Building. The SuperHILAC is still having troubles. We discussed in a general way the experiments that might get underway when these have been overcome.

After this, I dropped by 203 Building 70 and talked to Silva, Liljenzin, and Kratz about their work on the chemistry program, which seems to be going well.

I called James W. Kerr (Assistant Director of Research, Office of Civil Defense, Dept. of Defense in Washington) in connection with the SRI/Camp Parks situation. He expects that the actual experimental work will be over in 12-15 months. They will then go into the analytical work and close down the entire experiment after that, though he noted that he would like to reserve the option to do any recycling that might be required for a few months during the analytical phase. He agreed that having the experiment next to a public park would not be good, no matter what kinds of protection are set. He thinks, however, that the problem will take care of itself because SRI is tapering off. He noted that they would have to address themselves to these questions if they decided to extend the work. I

Berkeley  
xxxxxx

July 18, 1972

Dr. Dixy Lee Ray, Director  
Pacific Science Center  
200 Second Avenue North  
Seattle, Washington 98109

Dear Dixy:

I was delighted to learn that the President is appointing you to the Atomic Energy Commission and, perhaps more important, that you have indicated a willingness to serve your country in this role.

The President was very perspicacious indeed in his choice. You have outstanding qualifications and I believe that you will really enjoy the Washington scene.

I am afraid that your leaving your position as Director of the Pacific Science Center will leave us with a very difficult assignment in finding a replacement, but I heartily approve of your positive response to the call to higher duty.

With my best regards,

Cordially,

Glenn T. Seaborg

GTS/sms



told him that if they are inclined to finish the experiments within that time, I am inclined to handle it in that way. I thought they might need to put up more signs in the meantime; he added that they should also keep surveillance on the fence when the sources are exposed and that this could be put into the license right now.

Helen drove me to the San Francisco Airport where I boarded American Airlines Flight No. 16, which left at 1:30 p.m. and arrived in New York City at 9:30 p.m. I took a taxi to the Chemists' Club, where I checked into room 648.

Helen, Lynne, Dianne, and Suki drove to Yosemite today to pick up Eric and Hodgje, to drive them home tomorrow.

Wednesday, July 19, 1972 - New York

I had breakfast in the dining room of the Chemists' Club with Len Rieser and Bill Bevan to go over the topics we are going to discuss at the appointments we have today.

We walked to the headquarters of the Council of the Americas (680 Park Avenue); this building used to serve as the Soviet Consulate and is the place where Khrushchev stayed and made his famous balcony appearance during his visit to the United States in 1959. Here we met in a third-floor conference room with Charles Dennison, Technology Consultant for the Council, from 9:00-10:00 a.m. I described to him the plans for and scope of our Mexico City meeting. He was somewhat familiar with it, having read our booklet. I said we would like to receive financial aid from the Council to the extent of \$100,000 to \$150,000. He seemed generally receptive, saying that the best method of proceeding would be to meet with some members of the Council and that we should have some sessions devoted to the general problems faced by U.S. industry in Mexico and South America. He then brought in Henry Geyelin, Executive Vice President of the Council, and we reviewed our general conversation and conclusions with him. I suggested we meet with some key member of the Council today, and an appointment was set up, for 12:00 p.m., with Jose "Pepe" de Cubas, Chairman of the Council of the Americas and Executive Vice President of Westinghouse Corporation (Bevan's memorandum of the meetings is attached).

Next we took a taxi to the headquarters of the Rockefeller Foundation, the Time-Life Building at 111 West 50th Street. Here we met from 10:30-11:30 a.m. in a conference room on the 42nd floor with John Knowles, President of the Foundation; Sterling Wortman, Vice President; Ralph Richardson, a horticulturist and Head of Natural and Environmental Sciences; and Clarence Gray, Head of Agricultural Sciences. I described our plans to create a AAAS International Activities Office and our longer-range plans to steadily increase AAAS international involvement with the ultimate aim, perhaps, of becoming an International Association of Science. Our emphasis would be on Latin America, Africa, and Asia and, as a first step, the "American" in AAAS might take on the broader meaning of all of the Americas; later, we might become, I said somewhat facetiously, the African, American, Asian Association for the Advancement of Science (or the "Quintuple-A S" instead of the "Triple-A S"). We explained that we

8/17/72

July 21, 1972

Memo to the file

Visit on July 19 to the Council of the Americas

Dr. Seaborg, Dr. Rieser, and I met with Mr. Charles Dennison, Technology Consultant, at 680 Park Avenue, the headquarters of the Council of the Americas. The Council is a consortium of U.S. corporations operating in Latin America. They are at present most sensitive to the fact that Latin American governments view their presence in Latin America with mixed feelings.

Mr. Dennison was a delegate to the CACTAL meeting and the Council had several observers present. The Council came in for strong criticism directed toward the view that its member corporations were there to exploit the resources of Latin America but have been willing to make little of constructive contribution to the area. They are particularly worried about the implications of developing policies with regard to technology transfer. Latin governments have declared that corporation dominance will stop and that corporations will be expected to use indigenous talent.

Mr. Dennison expressed the strong hope that the corporation point of view might be made part of a dialogue at some point in the program. He indicated an exchange of this quid pro quo may be possible to raise funding from the more forward-looking corporate members such as IBM.

We were introduced to Mr. Henry R. Geyelin, Executive Vice President of the Council, and through him an appointment was made to see Mr. Jose de Cubas, Senior Vice President of Westinghouse and President of the Council.

Mr. de Cubas' response to information on the meeting was most positive and the following plan was worked out:

- (a) Dr. Seaborg would write immediately, informing Mr. de Cubas by letter of the forthcoming meetings and requesting support in the amount of \$100,000.
- (b) Mr. <sup>de</sup>Cubas would place the matter before his Executive Committee at their meeting of Tuesday, July 25.
- (c) Assuming endorsement by the Council's Executive Committee, Mr. Dennison and Dr. Bevan will prepare lists of corporation presidents

within the Council to receive solicitation letters from Dr. Seaborg. A tentative list was prepared by Dr. Seaborg and Mr. Dennison.

(d) Dr. Seaborg agreed to meet with the Executive Committee of the Council on August 30, if that can be arranged. He would be accompanied by Dr. Rieser and Dr. Bevan.

cc: Dr. Glenn T. Seaborg  
Dr. Leonard M. Rieser

Wednesday, July 19, 1972 (con't)

want a grant from the Rockefeller Foundation (\$25,000 has been mentioned) in order to make a year-long study of how the International Office should be set up. We elaborated that people such as Harrison Brown, Bentley Glass, Arthur Solomon (AAAS Representative to UNESCO), Al Baez, Christopher Wright, and Gene Skolnikoff might be brought in as consultants. In the course of the discussion a number of related, planned, or operating international organizations were identified--the International Federation of Institutes of Advanced Studies (involving such as the Princeton Institute of Advanced Studies, the Max Planck Institutes, the Swedish Karolinska Institute, the Nobel Foundation, Woods Hole Oceanographic Institute, etc.), the International Science Foundation (to which the Rockefeller Foundation has made a \$25,000 grant), and the African Association for the Advancement of Agricultural Sciences. We told them that the AAAS already has 20,000 foreign members (largest number in Germany, then Japan, the United Kingdom, and Latin America). We said we expect to have Howard Foncannon head up our study. We also mentioned the possibility of their making a contribution for support of the Mexico City meeting.

We received the impression that they will give us the grant; they held a meeting to make their decision right after we left. As we were leaving, Richardson said he had read my views on national energy policy and would like to talk to me about it some time.

Rieser, Bevan and I then walked to the Pan American Building where we met from 12:00-12:30 p.m. in his office on the 27th floor with Jose de Cubas; Charles Dennison was also present. We described the Mexico City meeting, the need for funds, and our hope that the Council of Americas could make a contribution on the order of \$100,000-\$150,000. It was agreed that I would immediately write a letter to de Cubas which he could use at the meeting of the Executive Committee next Tuesday to present our case. He was somewhat encouraging, but also indicated the need for a "quid pro quo" in the form of a symposium at the meeting devoted to the problems of technology transfer in Latin America. (Rieser later suggested that Brian Quinn of Dartmouth might be a good man to head this.) We tentatively set the date of Wednesday, August 30, when we might attend a luncheon meeting with some members of the Council.

Rieser, Bevan and I next walked to the headquarters of the Ford Foundation (320 East 43rd Street). Here we had lunch at 1:00 p.m. at the dining room on the 11th floor with William Carmichael and Francis Sutton. We described the Mexico City meeting and our hope to receive some funds from the Ford Foundation to help defray the expenses. (The figure of \$50,000 had been mentioned in previous contacts.) They indicated that they do not, as a matter of general policy, provide financial support to meetings as such. However, they indicated that they would probably supply some travel money to participants from South America through their South American office, and possibly some money to support individually designated symposia.

I took a taxi to the General Motors Building where I attended the 3:00 p.m. meeting of the Board of Directors of the Dreyfus Third Century Fund. Present were Howard Stein, Lucy Benson, David W. Burke,

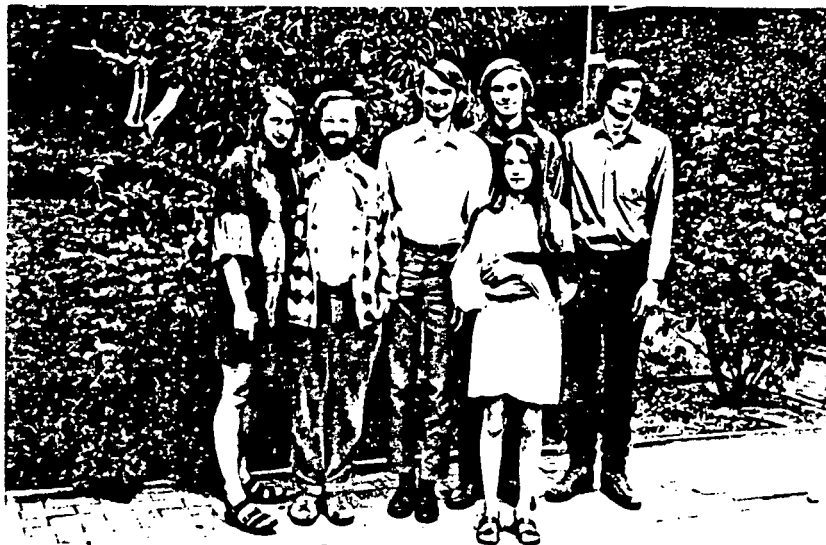
Robert F. Goheen, J. George Harrar, Sol M. Linowitz, John J. McCloy, Jerome S. Hardy, David Bronheim, Michael A. Glass, Lawrence M. Greene, Nicholas G. Ciriello, Leonard M. Leiman, and Margaret Evans.

Chairman Stein announced the resignation of Vernon E. Jordan, Jr. from the Board and suggested Clifford L. Alexander, Jr., as a replacement, who was approved after some discussion. When we came to the discussion of the Eligible List of Investments, some members of the special research staff joined us: Marcella C. Fava, Darryl H. Fagin, Michael Taylor, and James Cunningham. I suggested postponing action on the Dow Chemical Company and this was approved.

Manuel Cohen, former Chairman of the SEC, joined us at 5:30 p.m.; he is a consultant to Dreyfus. We continued discussing the list through dinner until 9:00 p.m.

After the meeting, I bought some records at the King Karol Record Shop on 42nd Street. I spent the night at the Chemists' Club.

Helen, Lynne, Dianne, Eric, Hodgie, and Suki drove home from Yosemite today; they spent last night in a tent cabin at Camp Curry. They saw a bear outside their cabin last night. During the morning they hiked to Sentinel Dome, then drove to Glacier Point for lunch.



Lynne and Bill Cobb, David, Stephen, Eric, and Dianne (holding Moses) Seaborg: 7/20/72.

Thursday, July 20, 1972 - New York - Berkeley

I had breakfast in Kim's Coffee Shop, next door to the Chemists' Club, then took a taxi to Kennedy Airport. I boarded American Airlines Flight No. 59, leaving at 9:30 a.m. and arriving in San Francisco at 11:30 a.m. Helen met me and drove me to my office.

I had lunch in the lower level of the cafeteria with Jack Hollander, Earl Hyde, Arthur Poskanzer, and others. I met Juha Aystö, a colleague of Kalevi Valli at Jyväskylä University in Finland. He is visiting with Earl Hyde.

After work, I took pictures in front of our house of Lynne, Bill, Dave, Steve, Eric, and Dianne (holding Moses) for use with our Christmas cards. Steve was home from Davis for the occasion.

Friday, July 21, 1972 - Berkeley - Bohemian Grove

From 9:00-10:30 a.m., I met with the superheavy elements (SHE) chemistry group at our regular weekly meeting. Present were Ghiorso, Nitschke, Liljenzin, Kratz, Silva, and Hulet. Hulet described his preparations for measuring chemical properties of element 104, using the isotope  $104^{261}$  produced by the bombardment of curium-248 with oxygen-18. We plan to have these experiments done during August in time to report results at the September Symposium on the Chemistry of the Transuranium Elements in Moscow. He and his co-workers will try to demonstrate the +4 oxidation state of element 104 by two methods-- extraction chromatography and hydrolysis experiments. If there is time, some experiments in the chemistry of element 105 may also be done in August. We also discussed the general status of operation of the SuperHILAC, which is still having problems.

The Program Committee of the Nuclear Chemistry Division met with bag lunches in my office from 12:00-1:00 p.m. Those present were Cerny, Edelstein, Ghiorso, Glendenning, Hollander, Hyde, Poskanzer, Perlman, Shirley, Street, Templeton, and Thompson.

Earl Hyde briefly described the letters, the contents of which were previously discussed, that have gone forward from McMillan to Spof English on the subjects of heavy ion work and outside review committees. Jack described progress in the Energy and Environment Program. With respect to non-AEC Laboratory programs, eight projects have been started now, exceeding one million dollars. He noted that neither NSF nor NIH will support AEC-supported laboratory programs. Jack informed us that Jerry Johnson (Division of Biomedical and Environmental Research, AEC) is pursuing development in geothermal energy; several west coast labs are being brought together to develop a geothermal program for FY74.

Earl described the Lab's problems in reconciling the FY72 budget; the Nuclear Chemistry Division initially ran about \$50,000 over. Al Ghiorso reported on the SuperHILAC; there have been some problems in the shakedown period. Beginning next week (July 24), they will adopt a new schedule: they will run two shifts on Tuesday and Friday for testing and will be shut down on Monday and Thursday for construction, with Wednesday open for whatever is needed. Earl announced that a meeting will be held in the Director's Office on August 1 to discuss the allocation of Accelerator Improvement Program (AIP) funds. We will have a meeting with Ghiorso and Harvey before this to present a united front.

At 3:30 p.m., I left the Lab and drove to the Bohemian Grove, arriving at 5:40 p.m. I went to my camp, Wayside Log, where Dana Eng, our camp boy, helped me get settled in. I changed clothes and then took Sol Linowitz, our guest, to the traditional cocktail party at Sons of Toil camp, after which we had dinner at the Dining Circle with some members of Wayside Log. After dinner, we went to the evening

show where Andy Devine served as sire; Phil Harris and his group put on a fine, nostalgic singing performance.



Sons Of Toil Party: Tom Neblett, GTS:  
Bohemian Grove, July 21, 1972.

Saturday, July 22, 1972 - Bohemian Grove

I had breakfast at the Dining Circle with some members of Wayside Log. I then took a hike with Sol Linowitz and Robley Williams (who went only part way) to Mount Heller and back via Stowe Trail. He mentioned to me the possibility of becoming a member of the Board of Directors of Datran, a subsidiary of University Computing Company of Dallas with headquarters in Vienna, Virginia, and I said I would like to have him look into it for me.

After we returned to Wayside Log, I went down to the Band Concert at the Lake. There I talked to Howard Vesper who told me that Mike May, Wally Zinn, and Hugh Heffner are replacing Norman Ramsey, Ned Goldwasser, and Jane Hall as members of the GAC. He told me about the trouble he had getting Staff and Shields Warren cleared by the AEC to receive the Fermi Award and about some of the candidates being proposed by Jim Schlesinger as future recipients.

I then went to Camp Bromley with my roommate Howard Williams (who has a farm in Calaveras County and will soon build a home in Reliez Valley in Lafayette). We saw a show in which Andy Devine, Art Linkletter, and others participated. Art told me he will attend the IPA meeting in Washington next month to turn his presidency over to Lowell Thomas. From here Howard and I went to Puma Camp to partici-

pate in their traditional wild game lunch. After this, we went back to Wayside Log where our campmates were just finishing their lunch.

I went down to the Lake with Jim Hart where we heard our campmate Herman Wouk give the Lakeside talk on The Winds of War at 4:00 p.m. His talk, which included an emotional plea for the values of the Grove, received a standing ovation.

I then went to Hideaway Camp to attend a reception for Arleigh Burke. Arleigh and I discussed the future of the American Swedish Historical Museum which includes items from the Swedish ship Vasa and other things of his. I talked to Roger Revelle concerning AAAS matters in view of his running for President. I talked to Guy Stever about his visit to LBL on Monday and to Fred Seitz about Science Service affairs and his membership on the board. Luis Alvarez told me that the basic patents for his liquid xenon radiation detector are in the public domain and the Varian Associates is interested in marketing it. Gunnar Johansen, who is spending the summer at his place just north of Sea Ranch, played the piano for the group.

I went back to Wayside Log, joined Sol Linowitz and Herman Wouk, and we visited Woof Camp. Here we met David Niven and had an interesting talk with him about his recent autobiography, which has given him more satisfaction than his 85 motion pictures. Phil Harris was also there. Sol and I talked to Bill Roth; as a result, Sol, who is seeing Ribicoff, Eagleton, and McGovern the week after next, may arrange to have Roth play a role in McGovern's campaign in California.

Sol, Herman, A. P. Otto (Woof Camp captain), and I had dinner together at the Dining Circle, after which Sol, Herman, and I went to the Centennial Low Jinks show, "Call It Frisco." This was only moderately entertaining and too long, lasting until after 11:30 p.m.

#### Sunday, July 23, 1972 - Bohemian Grove - Lafayette

I had breakfast at the Dining Circle. After, I talked with Harry Goff, our camp captain, about procedures for getting Sol Linowitz admitted to Bohemian Club membership. He will co-sponsor Sol with me and send us application forms. Harry has just finished a term on the membership committee and should be very helpful.

I took a hike with Sol and Herman to Mount Heller. Sol told me about his background of play-writing and acting and TV programs, which should be very helpful in gaining him Club admittance as an artist or performer, which means immediate admittance as opposed to the average 14-year delay for a regular applicant.

Jim Hart and I went down to hear the Lakeside Talk by Bill Lane on the National Parks. I spoke to Lowell Thomas about his beginning another term as IPA President. I talked with Jim Holliday about renewing action, with Joe Lahey, on our project of acquiring the green areas in Lafayette.

In the middle of the afternoon, I drove home to Lafayette, arriving at 5:00 p.m. Lynne and Bill, with their married friends Nate Laks and Nancy Bramberg, came by on their way home from Lake Tahoe.



Monday, July 24, 1972 - Berkeley

I sent Frank Giunta at the Statewide Personnel Office the necessary paper work to establish service credit for my Chicago leave of absence towards my retirement.

At 9:00 a.m., I attended the weekly planning session on the superheavy elements in the HILAC Building with Ghiorso, Nitschke, Nurmia, the Eskolas, and the Alonsos. Due to the new SuperHILAC schedule, our planning sessions will be moved to Monday mornings and the regular SHE Group will meet on Thursday mornings. We discussed the general status of the problems of getting the SuperHILAC and SASSY operating.

Leo Brewer and Victor Zackay dropped into my office at 11:50 a.m. to discuss their concern about the JCAE report in which the statement is made that unless funding for materials research is increased, they may cut out the program (a paradoxical statement!). This concerns them very much. I suggested that they might invite Chet Holifield and Craig Hosmer to visit the Lab during one of their visits to California so that the matter could be discussed with them.

At 12:30 p.m., I attended a luncheon in honor of Guy Stever, Director of the National Science Foundation, in the lower level of the cafeteria. Present were McMillan, Fidler, Calvin, Wenzel, Brewer, Zackay, Born, Connell, Kelly, and Pappas. Stever assured us that the NSF will support work at mission-oriented labs when (1) agreement on the program is reached at the Assistant Division Directors' levels between the NSF and the other sponsoring agency, or (2) the installation is associated with a University. Thus, in answer to a direct question from me, he confirmed that LBL could meet these criteria.

At 4:00 p.m., I attended the regular Monday afternoon Nuclear Chemistry seminar at which Matti Nurmia spoke on "Search for New Elements at the HILAC," primarily describing the Berkeley work on elements 104 and 105.

Eric flew to Philadelphia today to visit the Bill Jenkinse in Wilmington on the way to his job in Vermont with the Student Conservation Association.

Tuesday, July 25, 1972 - Berkeley

Dave started to work today with Ed Bennett's group in the Chemical Biodynamics Laboratory; he is working directly with Ann Orme. He rode to the campus with me.

I met with Dr. Joseph Heger of the University of Bratislava at 10:40 a.m.; he is the translator of the Slovak edition of Elements of the Universe. I autographed and gave him my copy of the translation. I told him about my visit to Czechoslovakia in September 1969, including my stay overnight at the Hotel Devin in Bratislava.

At 11:00 a.m., I talked to the Summer College Program (which is under Joe Cerny's supervision) group on "The Search for the Superheavy Elements," illustrated with slides. I had lunch with the group.

I called Joe Lewin at Oak Ridge at 1:55 p.m. about the ORNL publication which I had just received, "A Brief Summary of Dr. Glenn T. Seaborg's Visit to the U.S.S.R., August 1971," authored by Joe (ORNL-TM-3860). He said that he has written me a letter which explains that this is strictly an ORNL publication, for which he tried to use only the material that he had generated. It has been distributed somewhat within the AEC community. He told me that the response to date has been good and that AEC headquarters has requested additional copies. TIC is putting out the full version; Joe Gratton is handling its publication.

I called Bob Penneman at Los Alamos at 3:20 p.m. to commiserate over Larry Asprey's not getting travel funds to the USSR. He thought that Peterson might be able to give the talk on Burris Cunningham's work at the Moscow Symposium in September but that it would be most appropriate if I did it, which I agreed to. He told me that Russ Baybarz is going to Germany; he has found slightly different numbers for metallic radii of californium metal than Larry and Burris found. He suggested that if I were going to report this in Moscow, I should check with Baybarz first. I surmised that Peterson would probably cover this.

I watched the last part of the All-Star Game; the National League won 4-3, in ten innings.

Wednesday, July 26, 1972 - Berkeley

Dave rode into the campus with me to his work at the Chemical Biodynamics Lab.

I called Norbert Trautman at Mainz to see how things are going there and to give him a report on the current status of the Super-HILAC. I said that it is just now beginning to operate, that we might get into the work on the chemistry of element 105 in August but that it would more likely be September. He explained that Herrmann is on vacation until August 20, so that he himself is the only scientist who is responsible for the reactor. If we start the element 105 work before August 20, he would have to shut down the reactor--which he could do if necessary. I described my travel plans for early September and said that I might stop in Frankfurt to visit Darmstadt, on the way to Moscow on the 1st or 2nd.

At 9:15 a.m., Leo Lee, Western Regional Director for National Public Radio, interviewed me on the general national energy picture. The questions were generally concerned with the material I covered in my talk to the IEEE of which I gave him a copy. In addition, he asked me some questions about my feelings upon returning to teaching. He told me that he had obtained a tape-recording of my speech from the Commonwealth Club and it had been broadcast over the entire National Public Radio network.

Ernest Tremmel returned my call from Washington. He indicated that he had retired from the AEC because his 30 years of service was completed; the new 4.8% additional retirement benefit also meant that he didn't need to stay on salary-wise. He added that he didn't regret leaving because the Commission has changed so dramatically in its

approach. He is now a free-lance consultant, with a base at Burns and Rowe.

I had lunch at a table outside the cafeteria with Eugene Huffman and raised the question of his working with me on my History of the Met-Lab Chemistry Section C-1 project; he will let me know next week.

Thursday, July 27, 1972 - Berkeley

Dave drove in with me again. While walking up to the HILAC Building, I met Hugo Atterling, Swedish nuclear physicist, who is visiting the Lab for a few days; I haven't seen him for some 10-15 years.

At 9:00 a.m., I attended the regular SHE Group meeting. Silva, Ghiorso, Harris, Kratz, Liljenzin, Hulet, Nitschke, Nurmia, Larsh, and Richard Leres were present. We discussed plans for Hulet's experiment to study the chemical properties of element 104 produced by the reaction  $^{248}\text{Cm} (^{18}\text{O}, 5n) ^{261}\text{104}$ ; tests may start as early as next Tuesday. We also discussed the detectors, electronics, and computer arrangement for the fast chemistry setup.

At 10:30 a.m. we began the regular meeting of the larger Super-HILAC research group with the session on "HILAC Hilites" by Nurmia--a summary of recent interesting research as reported in the literature. Ghiorso told us that the SuperHILAC has produced  $^{12}\text{C}^{+2}$  ions, from the Eve ion source, all the way through the machine. The x-ray shielding is pretty good with some coming through at the openings at the amplifiers. The large ion source, Adam, is still having problems, so we still cannot accelerate ions heavier than argon. Nurmia described his measurements of the thickness of the thin foils used in SASSY; he obtained values of about 7.5 micrograms per sq. cm. Jose Alonso talked on the calculation of potential barriers for heavy ion reactions. Ken Mirk described the problems of repairing Adam to make it operable. Liljenzin described the chemical identification experiments that he and Kratz have been doing.

From 12:00-1:30 p.m. I presided with Earl Hyde over the monthly meeting of the Senior Staff in the conference room of Building 70A. Present were Frank Asaro, Harry Bowman, Joseph Cerny, David J. Clark, John G. Conway, Homer E. Conzett, Richard Diamond, Norman Edelstein, Warren Garrison, James Harris, Alvin Hebert, Jack Hollander, Almon Larsh, C. Michael Lederer, Samuel Markowitz, Maynard Michel, William Myers, Amos Newton, Matti Nurmia, and Eileen Eiland. I opened with some general remarks on the purpose of the meeting, explaining its informal nature, and indicating that I hoped we would meet more often in the future. I described the status of the SuperHILAC. The summer programs were then described by those responsible for them--Cerny for the undergraduates, Asaro for the minority college faculty and high school student, and Myers for the theorists. We explained that Doral Buchholz has retired and that Eileen Eiland is now the office manager. Hollander described the status of his program on Energy and Environment. Hyde described the new role of Washington AEC and SAN in supervising more closely our programs and mentioned the letters requesting information on review committees and research. He also

revealed how we finished with our FY72 budget and the problems with respect to the FY73 budget, foreign travel, etc.

Huffman dropped in and spent the early part of the afternoon reading my Met-Lab Section C-1 file.

At 4:00 p.m., I attended a Nuclear Theory Seminar in the conference room of Building 70 given by Dr. Eberhard R. Hilf of the Institute fur Theoretische Kernphysik, Technische Hochschule, Darmstadt, Germany on "The Structure of Neutron Stars." He is flying to New York tomorrow to join his friends to sail across the Atlantic--he estimates this will take 3-4 weeks.

Helen went to the San Francisco Airport to pick up Ty Jenkins who arrived on a plane from Philadelphia at 8:30 p.m. She is staying with us until she goes to Yosemite next Monday to start work with the Student Conservation Association (SCA).

Friday, July 28, 1972 - Berkeley

At twenty minutes before noon, I walked down to the office of University Vice President John Perkins in 417 University Hall, from which we went to the California Restaurant on the third floor of the Great Western Building on Shattuck Avenue.

I told him about LBL's program which is being conducted in collaboration with the campus on Energy and Environment, headed by Jack Hollander. He indicated that he had heard from Chancellor Bowker that there was some concern on the campus about coordination with campus departments. I replied that I had learned that George Maslach had displayed a negative attitude toward LBL and possibly that had been carried over somewhat in his new position as Provost, but I hoped this was not the case. I said that I would check with Bowker to try to find out what the difficulties are.

John began the discussion of the status of LBL by indicating that he had talked to AEC General Manager Hollingsworth in the presence of SAN Operations Manager Robert Thorne and John Ryan and gathered that all is not well with the management of LBL. (He mentioned that he had also talked to Harold Agnew of Los Alamos and Roger Batzel of Livermore and felt that things were in good order there, which I confirmed.) He said that he concluded that Ed McMillan wasn't doing a very good job as Director of LBL, and I replied that I was forced to agree with him and that, as a result, the second level of management (Dick Connell, etc.) was also doing a poor job.

John asked whether I thought the Townes Committee would make a recommendation with respect to the replacement of McMillan and I explained that I didn't think this was clearly within their charge. He said he would talk to President Hitch and ask him to direct the Committee to make this part of its charge.

At 3:00 p.m., Dr. Kai Lee came to my office to discuss a seminar on "Energy Policy" which he will offer at the Institute of International Studies this coming year. He outlined his plans, and we discussed some of the material that should be covered. I gave him

copies of Man and Atom, Nuclear Milestones, and Peaceful Uses of Nuclear Energy, as well as a copy of my IEEE talk.

Bob Silva dropped in just before 4:00 p.m. to say that he is going back to Oak Ridge tomorrow to stay 2-3 weeks. He said that Darleane Hoffman had called him and said that either Bill Daniels or Kurt Wolfsberg might be the LASL person to work with us on the chemical identification of the superheavy elements. He told me Phil Horwitz will probably come to work with us in September. He also informed me that Ivo Zvara is due at Oak Ridge around the first of August.

Helen had lunch at Annamary Peery's, our neighbor across the street, along with Marjorie Alexander, another neighbor. She saw the Peery's planned new home in Diablo Hills, near Walnut Creek.

Dave drove Ty to Stanford to show her the campus, although she now plans to go to Holyoke College. Ty had finished high school in three years and may take half or all of next year off. Lynne drove to Davis this afternoon to pick up Steve (and E. Coli) who took his summer quarter final exams yesterday. He will be home for part of the time until he starts east with Lynne around August 8.

I worked in our back yard during the evening before dinner, as I have done each evening this week; this has replaced my usual hike.

Saturday, July 29, 1972 - Lafayette

I went through my journal to find extracts that are relevant to Travels in the New World; these are extracts covering my activities involving foreigners in the United States to supplement the accounts of my travels abroad. I read a proof on my article "Transuranium Elements" for the Encyclopedia Britannica.

In the afternoon, Ty, Lynne, Bill, Dave, Dianne, Helen, Suki, Bessie, and I drove to Live Oak Camp on Mount Diablo. Here we parked the car and started hiking up the trail to the top. It was rather hot. Helen, Dianne, and the dogs went part way, then went back and drove the car to the top of the mountain to be on hand when we arrived there. We hiked a distance of four miles to the top, where we had refreshments at the snack bar. We then drove back home and all had dinner with Steve, who had remained home during the afternoon.

Sunday, July 30, 1972 - Lafayette

Helen, Ty, Dave, and Dianne went to Golden Gate Park in San Francisco to visit the DeYoung Museum, aquarium, etc. I finished going through my journal identifying extracts. Steve and I worked in our yard.

At 6:00 p.m., we all attended an open house at the Rigdons, our neighbors across the street, to see the railroad caboose they bought at the recent KQED auction. Steve's friends Ron and Joan dropped by during the evening.

Monday, July 31, 1972 - Berkeley

Dave rode in with me. Helen and Suki drove Ty Jenkins to Yosemite today so she can start work with the SCA.

I wrote to Professor E. Lawrence Bahn, Jr. at Southeast Missouri State College thanking him for sending the linear amplifier that Arthur C. Wahl identified as ours. Al Ghiorso has verified it as one he built.

At 9:00 a.m., I attended the SuperHILAC Planning Group meeting. We discussed the status of the SuperHILAC and accompanying equipment. A practice experiment with carbon ions, using the Eve source, to make rare earth alpha emitters will be tried tomorrow to prepare for Hulet's 104 chemistry experiments; Mel Coops and Hulet's other people are setting up their equipment today.

At 11:00 a.m., Ghiorso, Main, Hyde, Harvey, and David Clark came to my office to discuss our plans for the meeting tomorrow at which the Accelerator Improvement Program (AIP) funds will be discussed, with a view towards a possible division between the Bevatron, 184" cyclotron, 88" cyclotron, and the HILAC. On looking over the authorization of AIP funds for FY72, we noticed that the initially planned and authorized division of funds was much more in favor of the HILAC than was the final allocation from the smaller amount of money that was actually appropriated for the AIP.

I had lunch at a table outside the cafeteria with Hyde, Poskanzer, Edelstein, and Ralph Korteling, a summer visitor from Simon Fraser University near Vancouver who has been working with Hyde for a number of years.

At 1:00 p.m., I heard part of a talk by John Cooper--"Comparative Capabilities of Analytical Techniques in Environmental Chemistry"--in the Building 70A conference room. Cooper, from Battelle Northwest Laboratory, is under consideration to join Hollander's program as a group leader in environmental chemistry.

I called George Pappas at 1:25 p.m. to inquire why the final allocations of the AIP funds were not prorated. He explained that when the final allocation comes in, the past history is laid aside and LBL starts over again, not using the previous work as a guideline. I asked him to send me figures for each of the last five years to include what the authorization bill stated, what the final appropriations were, and the final division of the money, which he said he would do. We agreed we should postpone the meeting to Friday or Monday, since he must have the material to the Division of Research in time for them to meet their August 8 Controller's deadline. I indicated my surprise at this procedure and, noting that this is carefully hammered out in Washington, asked if they know LBL does this.

At 2:15 p.m., I drove down to the campus and went to Dwinelle Hall to participate in the Symposium "Copernican Revolutions in the Sixteenth Century and in Modern Times." I went to room 145 where I met Jerzy Neyman and Chancellor Bowker at the front of the overflowing

room. I told Bowker about my lunch with Vice President Perkins and his statement that Bowker is worried about campus relations with LBL relative to the Energy and Environment Program. He said he will appoint a committee to look into this.

Due to the size of the crowd, the Symposium was moved to room 155. Bowker made some introductory remarks and presented Neyman who described the proposed National Academy of Sciences Copernican Volume and the life and impact of Copernicus. Neyman then introduced Professor Rainer K. Sachs who spoke on "The Intellectual and Technological Revolution Caused by Einstein's Special and General Theories of Relativity," and Professor John Hammersley (Trinity College, Oxford) who spoke on "The Technology of Thought."

After a twenty-minute intermission, Neyman introduced Professor Michael Kasha who spoke on "Order Out of Chaos--The Mendeleev Periodic Table and the Systematics of Chemical Elements." He then introduced me, and I spoke on "From Mendeleev to Mendeleevium and Beyond." Dave came into the auditorium near the end of my talk. At the conclusion of my talk, the four speakers assembled on the stage and answered questions until 6:00 p.m.

Dave rode home with me. I found Lloyd Rudholm at work repairing the sprinklers by our tennis court. Steve, Dave, Dianne, and I had TV dinners. Helen returned from Yosemite around 11:00 p.m.

Tuesday, August 1, 1972 - Berkeley

Dave rode in to work with me. Sven-Gosta Nilsson started his sabbatical stay with us today, having flown here from Sweden yesterday. His family will arrive around August 18.

At 9:45 a.m., Hugo Atterling dropped in to see me. He is an old friend from the Nobel Institute of Physics in Stockholm and one of the team who worked on element 102 in 1957, and he has been at LBL on a number of visits in previous years. He is still at the same place, although its name was changed to Forskningsinstitutet för Atomfysik (Research Institute for Physics), when it was taken over by the Swedish government in 1964. I told him about my forthcoming visit to Sweden to give the Studsvik Lecture, and he invited me to visit the Research Institute at that time.

I called Glenn Ellis at AEC in Washington at 11:40 a.m. to ask if he still has the pictures taken from my photo albums for use in Nuclear Milestones. He thought they had been returned, but since I don't find them in the albums, he indicated that he would follow this up. I told him that the book will be published in about two months and that he will be one of the first to receive a copy. He said he has been looking over the manuscript on the other speech volume in terms of photographs that might fit. He will hold onto it in the meantime. I indicated that I'm not sure what I will do with it, but don't want to see all of the effort lost.

Norman Glendenning brought Walter Greiner and his student Rolf Muller into my office just before noon. Greiner arrived in town a day or two ago with his family. After talking a while, we were joined by

Tuesday, August 1, 1972 (con't)

Nilsson and Chin-Fu Tsang and went down to the cafeteria for lunch. We ate at the table outside, overlooking the campus. In a wide-ranging conversation, Greiner again expressed his complaints about the liberal student activities at the University of Frankfurt. I told him that I plan to visit Frankfurt and Darmstadt on September 1, and he said that he would write the people at Darmstadt to tell them of my plans. I also told him of my conversations with German Ambassador to the U.S. Rolf Pauls while I was AEC Chairman in which we discussed the possibility of using German counterpart funds in the United States to support heavy ion research. Although Ambassador Pauls was quite interested, there was no follow-up to this. Greiner said the same subject had been discussed with Christoph Schmelzer (head of the heavy ion development at Darmstadt) and that possibly a cooperative arrangement in which they lend some financial support to the SuperHILAC operations and its research program might be arranged. He suggested I talk to Schmelzer when I visit him on September 1, and in the meantime he will write him to open the issue with him.

From 1:30-2:45 p.m., I met with Poskanzer, Michel, Hyde, Edelstein, Thomas Parsons, Buford Price and his student H. P. Crawford to make plans for an experiment suggested by Poskanzer for the identification of superheavy elements produced by bombardment in the SuperHILAC by a process of volatilization followed by mass Spectrographic separation and identification in a photoemulsion. During the first half hour, I participated in the regular monthly phone conference on the superheavy elements program. Others participating were Myers, Swiatecki, Tsang, Thompson, Moretto, Nilsson, Greiner, and Ghiorso with a group at the HILAC; Heiner Meldner from San Diego; John Huizenga, Rochester; U. Mosel, Seattle; and Ray Nix and Philip Seeger, Los Alamos.

After the conference call, Meldner called me at 3:00 p.m. to acquaint me with his latest idea of a laser-induced fusion source of neutrons for the production of superheavy elements in a stepwise fashion. This work has not been declassified, but he said that Dr. Teller has a copy of his manuscript at Livermore.

At 3:45 p.m., Earl and I made a tour of the computer facilities on the first floor of Building 50B under the guidance of Operations Manager Paul Rhodes. He showed us the printout room and then took us into the main room where the CDC 7600 (which cost \$5 million) is situated and the two CDC 6600 machines (which cost \$2.5 million each) are situated. We also visited in the room across the hall in the area of the IBM 7094.

I wrote Sol Linowitz in connection with his upcoming meeting with George McGovern (copy attached).

George Pappas came over at 4:30 p.m. to give me the breakdown of the AIP funds for the last several years, as they were in the Congressional budget originally and finally, and the LBL distribution of the final allotment. It appears that the Bevatron has been consistently favored. He also said he had discussed with George Rogosa the possibility of Kolstad's Physics Branch giving support to the Super-



Berkeley  
XXXXXX

August 1, 1972

The Honorable Sol M. Linowitz  
Coudert Brothers  
200 Park Avenue  
New York, New York 10017

Dear Sol:

As promised, I am sending to you under separate cover a copy of my book Man and Atom.

I have been fascinated to watch during the last few days the spectacle of Senator Eagleton. What would you think of Larry O'Brien or Terry Sanford (or Sarge Shriver?) for Senator McGovern's serious consideration.

I enjoyed very much our walks and visits during our weekend at the Bohemian encampment.

With warm regards,

Cordially,

Glenn T. Seaborg

HILAC, and according to Rogosa, Kolstad will do this only if a Nuclear Physics Division is created at LBL, and Kolstad doubts that Ghiorso or Diamond would be suitable directors for this division. Pappas will bring Earl Hyde up-to-date on this with a thought in mind that Earl might call Kolstad directly.

I worked in our back yard just before dinner, continuing to clear the ditch at the back end of our property.

Wednesday, August 2, 1972 - Berkeley

Dave rode in with me. I wrote to the editors of Sports Illustrated to support the nomination of John Wooden as "Sportsman of the Year."

I had lunch in the lower level of the cafeteria with about 25-30 of the students in the Neighborhood Youth Corps (NYC) Summer Program. Frank Asaro was also present. We were at several tables, and I became acquainted with a number of those at mine. At the end of the lunch, Tony Delacruz--Director of the Program--introduced me, and I gave a short talk. I described my early connection with the Laboratory, mentioned my tenure as Chancellor of the Berkeley campus, and my years as Chairman of the AEC. In the latter connection, I described President Kennedy's call to me in January 1961 and the ensuing family vote against my accepting the offer. I concluded by making some general remarks about the growth, present purposes, and program of the Lawrence Berkeley Laboratory.

From 1:30-2:30 p.m., I met with Rolf Mehlhorn, Walter Greiner, Jol Liljenzin, Jens Kratz, and Norman Edelstein. Mehlhorn is now working with Professor Lester Packer of the Department of Physiology on energy transduction (transfer). He said that he is now so involved in his work with Packer that he doesn't have any appreciable time to work on the calculation of electronic structures of the transactinide elements by the parametric method. He also thinks that work should be going on here on ab initio calculations by the Hartree-Fock method. The question of whether we have 7p or 6d electrons in 103, 104, 105, and so forth should determine the oxidation states of these elements. For example, a 7p electron in 103 could lead to a +1 state. In order to carry on such calculations, it would be necessary to find someone in the Nuclear Chemistry Division; I said I would keep it in mind, including the possibility that a graduate student might elect to do this, and will let Mehlhorn know.

I participated in a tour of Point Pinole from 5:30-7:00 p.m. and dinner at the Jasmine Restaurant in San Pablo with members of the Citizens Task Force of the East Bay Regional Park District and staff members of the District. About 40 members of the task force, Hulet Hornbeck, Bill Horne, and other staff members went on the tour. I had the opportunity to talk to Richard E. Erickson, Margaret Bowman, Molly Reeves, Joyce Burr, and Walter Schwartz (who works at LBL and is active in the Contra Costa Hills Club). Most members of the task force were quite favorably impressed with Point Pinole.

At the dinner, I sat at a table that included Ann Christofferson (who used to work in President Kerr's office when I was Chancellor)

and Joyce Burr. The Chairman of the task force, Joseph Bort, presided over the meeting. Al Baum gave a presentation that included a description of tentative criteria for evaluating proposed acquisition sites (copy attached). Dick Trudeau gave a presentation describing the EBRPD and its method of operation (copy attached). Bort then went on to a discussion of the Point Pinole acquisition and, after a spirited discussion, the task force voted 40-7 to recommend that Point Pinole be acquired for the EBRPD on the assumption that reasonable sources of funds are available. Since \$1 million of the \$2.5 million which will be available to Contra Costa County if a special land acquisition statewide bond election passes in 1974, a special vote was taken of the Contra Costa members who voted 17-1 in favor of it.

Following this, Hulet Hornbeck made a report on the duties and responsibilities of his land department (copy attached), and Doreta Chaney made a report on her work in developing private funds for land acquisition (copy attached). It was announced that the next meeting will be on September 13 (I will be in Sweden). The meeting adjourned at 10:30 p.m.

Thursday, August 3, 1972 - Berkeley

Dave rode in to work with me in time for his 8:00 a.m. seminar in the Chemical Biodynamics Building.

I wrote my report to Hulet Hornbeck on the possible impact of the Stanford Research Institute's radioactive source work on the public use of the EBRPD's Camp Parks property (copy attached).

I then called William White at the Stanford Research Institute to inform him about the nature of my report to the EBRPD. I indicated that in view of the cost of changing to another site or erecting the cyclone fence, and in view of the fact that SRI's experiments probably can be completed before the area will be actually used as a park by the public, I would not recommend that SRI do either of those things. If the area becomes a park before the experiments are finished, then SRI should be required to move or build a fence. In the meantime, I will report that there should be surveillance when one or more of the four cobalt-60 sources are exposed. He said that they are in complete agreement and indicated that they are about to go to the compliance people for an amendment to their license that will include this. He had talked with James Kerr after I did, and they think it will probably be a self-solving problem. He told me that they are speeding up the experiment process and may be terminating even sooner than they thought--though he added that he and Kerr would want the option of being able to repeat whatever experiments might be necessary during the analysis period. I said I appreciated the cooperation he has shown.

At 10:30 a.m., I attended the regular weekly meeting of the SuperHILAC Research Group. Greiner and Nilsson joined us for the first time, and Meldner was also present. Jose Alonso gave the "HILAC Lowdowns" report. Ghiorso gave a status report on the Super-HILAC. If Adam can be put into operation next week, he will accelerate Kr ions, then Xe ions, and then possibly Hg ions. Greiner then spoke on "Quasi-Molecular Nuclei."



## OVERVIEW

Bay Area Office  
HOTEL CLAREMONT  
BERKELEY, CA. 94705  
PHONE (415) 845-6346

*Baum 8/2/72 mtg*

East Bay Regional Park District Citizens Task Force  
Meeting of August 2, 1972

Tentative Criteria for Evaluating Proposed Acquisition Sites

Over eighty potential sites have been suggested to date for acquisition by the East Bay Regional Park District during the time period to be covered by the master plan. Clearly, all of these sites can not be acquired during the master plan period. Each site must be evaluated in terms of criteria representing policies which should guide the Park District during the years ahead. Attached is a draft of the criteria which Overview presently intends to use for this purpose. The draft does not contain any dollar figures because the figures have to be derived from information as to actual selling and asking prices which will be collected at a later stage of the master planning process.

We welcome your comments and suggestions with respect to these criteria. For your information, we have attached also a copy of the "inventory form" which we are using to record information with respect to each acquisition site. The "inventory zones" are intended purely for record keeping purposes. The eight zones are as follows:

North Central Contra Costa County  
Northwest Contra Costa County  
Southwest Contra Costa County  
Southeast Contra Costa County  
Northeast Contra Costa County  
East Bay Shoreline Cities, North of US 50  
East Bay Shoreline Cities, South of US 50  
East Central Alameda County

Sincerely,

Alvin H. Baum, Jr.  
Project Director



## OVERVIEW

### CRITERIA FOR DETERMINING SITE ACQUISITION PRIORITIES

#### 1. Need or Demand

A number of "Park types", each representing a dominant recreation activity or function, will be given a high, medium or low ranking according to the relative need for that type within the East Bay Regional Park District. The same priority ranking of these types will be made for selected sub-regions. The tentative "park types" are:

Shoreline park  
 Vehicular recreation area  
 Lands to round out existing parks  
 Extensive natural environment area

Other recreation areas  
 Swimming facility  
 Sailboating and fishing facility  
 Power boating area  
 Campgrounds  
 Equestrian center  
 Youth hostels  
 Picnic grounds and playfields

Each potential acquisition site will be given the ranking of the activity or function appropriate to it, and if it could serve multiple activities or functions, the site will be given the highest ranking of any of the activities or functions.

#### 2. Uniqueness

High            -Only area within the District which is ideally suited to a particular "park type", or  
                   -Site contains natural or cultural feature(s) (historical, architectural, etc) which are unique, rare or very unusual within the District.

8/2/72

- Medium      -One of only a few sites in the District which are ideally suited to a particular "park type", or  
                  -Site contains very attractive natural or cultural features which can be found in only a few other places in the District.
- Low            -One of many areas suited to the proposed "park type", or  
                  -Site is not especially different from surroundings or other areas in the District.

### 3. Threat of Loss

- High            -Development proposals damaging to the prospective park value have been filed with a public agency or are known to be in preparation.  
                  -Urban services (water and sewer) are available within the site.  
                  -Area is zoned for an Urban use.  
                  -Current management is beginning to destroy site qualities.
- Medium        -Property is up for sale but without a development proposal.  
                  -Development has been approved on adjacent property.  
                  -Water and sewer lines could be extended easily from existing lines outside the area.  
                  -Property is not subject to an "agricultural preserve" contract under the Williamson Act.  
                  -Current management practices are not beneficial to the site.
- Low            -No development proposals; little chance of development expected in the near future.  
                  -Zoned as agricultural preserve and/or subject to Williamson Act contract.  
                  -Not suitable for development regardless of zoning, e.g., steep and hazardous land.  
                  -Current management practices are maintaining the area in good condition.

### 4. Ease of Development, Maintenance and Operation

- High            -Only minimal development required for potential EBRPD use; maintenance and operation costs low.
- Medium        -Development costs medium for potential EBRPD use; maintenance and operation costs medium.
- Low            -Development costs or maintenance costs very high, and the area is of little value for EBRPD unless developed or rehabilitated.

#### 5. Accessibility from Populated Areas

- Very high - Within 15 minutes walk of existing or potential bus transit route or BART station.
- High - Serves over 20% of the District population within 15 minutes travel by automobile.
- Medium - Serves over 20% within 30 minutes by automobile.
- Low - Serves 10-20% within 30 minutes by automobile.
- Very low - Serves less than 10% within 30 minutes by automobile.

#### 6. Accessibility from Low-income, High-density Urban Areas

- High - Within 10 minutes walk from the edge of low income area.
- Medium - Within 20 minutes walk from the edge of low income area.
- Low - Over 20 minutes walk or very difficult to reach by foot or bicycle.

#### 7. Geographic Distribution

- High - Located in an area poorly served by any type of existing regional park.
- Medium - Located in an area moderately served by existing regional parks (developed or undeveloped).
- Low - Located in an area well served by several regional parks.

#### 8. Ease of Acquisition

##### a. Cost per acre

- Very high Less than \$A
- High \$A to \$B
- Medium \$B to \$C
- Low More than \$C

##### b. Total Cost

- Very high Less than \$D
- High \$D to \$E
- Medium \$E to \$F
- Low More than \$F

c. Ownership

- Very high      Cost-free (gift by public or private owner expected)
- High            No more than a few landowners who are willing to sell at acceptable price.
- Medium         No more than a few landowners, but reluctant to sell at acceptable price.
- Low             Many landowners.

9. Intrinsic Suitability

(Only to be used in comparing several alternative sites for the same "park type")

- High            -Ideal site qualities (e. g. , soils, topography, water, vegetation)  
                   -Essential addition to an existing park (watershed, viewshed, needed for effective design of recreation facilities)  
                   -No major problems associated with the site.
- Medium         -Good site qualities.  
                   -Desirable addition to an existing park.  
                   -A few problems associated with the site.
- Low             -Fair site qualities.  
                   -Usable addition to an existing park.  
                   -Several major problems associated with the site.



EBRPD/Park Site Inventory Form

1. NAME OF AREA:  
(and special use proposed, if any)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. APPROXIMATE SIZE (in acres):

\_\_\_\_\_

3. LOCAL JURISDICTION:

a. County:

Alameda       Contra Costa

b. City ?:

\_\_\_\_\_

Community Service District  
or County Service Area:

\_\_\_\_\_

c. Inventory zone:

\_\_\_\_\_

d. USGS quadrangle(s):

\_\_\_\_\_

e. Present zoning:

\_\_\_\_\_

4. FINANCIAL:

Parcel                      Per Acre                      Total

a. Estimated acquisition cost:

<u>Parcel</u>	<u>Per Acre</u>	<u>Total</u>
_____	\$ _____	\$ _____
_____	\$ _____	\$ _____
_____	\$ _____	\$ _____
_____	\$ _____	\$ _____

b. Estimated development cost:

\$ \_\_\_\_\_

5. SITE SUGGESTED BY:

\_\_\_\_\_  
(Name)  
\_\_\_\_\_  
(Organization)  
\_\_\_\_\_  
(Address)  
\_\_\_\_\_  
(Phone)

6. SITE CHARACTERISTICS:

(Provide answers on a separate sheet by letter a. b. c. , etc.)

- a. Boundaries.
- b. Present Owners (with numbers of acres and assessors parcel numbers).
- c. Existing Land Uses (with numbers of acres).
- d. Outstanding Site Qualities.
- e. Potential "Uses" (types of recreation, wildlife preserve, etc.).
- f. Possible problems to park use (adjacent uses, lack of services or access).
- g. Threat of loss and Defendability (any current or major past proposal for physical or use change; would area be usable as suggested in e. regardless of changes on site or adjacent?).
- h. Acquisition. (Is land available as gift or for sale? Price? Any known likely sources of purchase funds?)
- i. Comparative comments and additional information.

PRESENTATION TO CITIZENS TASK FORCE

I How the District is organized

A. The Board of Directors

1. Board sets policy - General Manager makes recommendations but once policy set, he has responsibility to carry out policy.
2. Board formerly accepted all recommendations of General Manager until they found they were over-committed financially. Have asked more questions, become more independent since.
3. Board carries on business by twice-a-month meetings, plus field trips and committees.
4. Board will respond to General Manager on "urgent matters", but General Manager cannot go "to the well" too often.
5. Elected by wards, "one man, one vote" every four years - staggered basis. (Exhibit ward boundaries)
6. Competition for Board seats since 1964 "no free rides" - \$100 month (2 meetings). Petition of 50 voters.

B. General Manager and departments

1. General Manager is also administrator - works with Board, other agencies, assists other departments, coordinates and supervises; handles legislative matters.
2. General Manager has to be generalist - who delegates responsibility to department heads. We have had this as "policy" since 1968 - includes carrying ball at Board meetings.
3. General Manager also has to be "strategist" if progress is to be made - important to be able to work with the entire community (industry, labor, conservation).
4. Exhibit organization chart.
5. Affirmative action policy - minority hiring policy since 1968.

Note: Organization chart is only guide; changes now in some respects; expect it to undergo major changes next year.

- 5. Crisis situations - assign department heads on basis of who is best able to handle problem and availability of time.
  - (a) Orman - Banke Quarry (Nelson)
  - (b) Apperson Ridge (Trudeau and all department Heads)
  - (c) Moore Lot Split (Hornbeck) - (Now Kent)

Flexibility; learn and grow (principles)

II Legislation

- A. This year - rebuttable presumption" on all Regional Park lands (SB 256 Petris).  
Force account limit - \$3,500 (AB 61 Dent)
- B. Other years - borrow up to 2-years tax revenues by 4/5 vote of Board. (Used on Wildcat Canyon)

1973 would equal \$15 million

1974 would equal \$20 million

"Condemnation on trail land"

Tax legislation

III Limiting Factors

- A. Governor's tax reform (Keep local agencies frozen at 1972-73 tax level for two years - then only increased by public vote.)
- B. Watson initiative (Inter-county agencies share 50¢ limit - EBMUD, BART, A/C Transit, Air Pollution, etc.)

Complicated - would put us out of business or create absolute chaos, would encourage development

- C. Revenue sharing (A boon to cities, but special districts not included) May be changed - N.R.P.A.
- D. Change in HJD policy - related to revenue sharing.

- E. Eventual "deficit" on present 10 cent tax levy - estimate of 1975-76.
  - 1. 1968 - \$3 million deficit against commitments (Marsh Home, Tilden Golf Course, expenditures, other)
  - 2. Review by Jerry Kent of present financial projection.
- F. Need to remodel present parks in keeping with the times (internal transportation at Redwood, limit number of users, revamp use).

#### IV. Priorities

- A. Desire to use Overview and Task Force in decision making (not pre-empt role).
- B. Pt. Pinole - only priority project.
- C. Others for you to consider:
  - 1. Wood property (District Headquarters)
  - 2. Coyote Hills
  - 3. Sunol (Welch Creek Road)
  - 4. Pt. Isabel land (Post Office)
  - 5. San Leandro Bay
  - 6. Mechanical Park sites
- D. Other proposals will arise - what policy should you and Overview have?

#### V. Relations with Other Agencies

- A. Some good, some fair, some not so good
  - 1. B.C.D.C., Nature Conservancy - excellent
  - 2. Contra Costa Water District - excellent
  - 3. Both counties - good
  - 4. Most cities - good
- B. Some problems
  - 1. EBMUD - property on San Leandro Bay
  - 2. Alameda Flood Control - Cull Canyon

3. San Francisco Water - Land leases at Sunol (James Carr).
4. Sewer agencies - on horizon (positive sewer connections)  
No chemical toilets

## VI Conclusions

### A. Other Regional Park District's

1. We are only ones in California presently.
2. By November 8 there may be a "mid-Peninsula District" and "Marin County District". Neither are Regional Park Districts in the sense of East Bay Regional Park District.
3. There are others (Maryland-Capitol, Huron-Clinton) but for first time on October 5 in Anaheim, all will get together to exchange ideas.
4. There may or may not be others, depending on status of special districts - danger in not getting "share of funds" when part of county or broad Regional Government - depends on structure and persons heading it up - plus citizen interest.

### B. Land use is "step-child" of environmental revolution - shows up in such things as Shell Ridge, Sunol, Coal Mines dispute.

1. At National Outdoor Recreation Plan Forum we made this point clear - Federal, State and local.
2. Need for imaginative and innovative funding (internal transportation, revenue sharing, Land and Water) and research.

### C. Recreation needed on urban impacted areas - minority people must have share of "good life" if environment concerns are to succeed.

In this field, you have to do what you think is in the best public interest - and be ready to take criticism and brickbats. One time, the brickbats come from one direction - another time from another group. Hopefully, in the process, you do not eventually have everybody against you - or for you (that is dangerous too).

Lincoln may have said it best, "If the end brings me out all right, what is said against me won't amount to anything. If the end brings me out wrong, ten angels swearing I was right would make no difference.

Hornbeck 8/2/72 conty

OUTLINE OF LAND DEPARTMENT PRESENTATION AUGUST 2, 1972, TO THE CITIZENS TASK FORCE ON 2001 DUTIES AND RESPONSIBILITIES OF THE LAND DEPARTMENT

---

I. DETAILS OF THE DEPARTMENT

- A. Age in District: 7 years
- B. Number of employees: 3 + 1 intern + 1 temp
- C. Anticipated employees: 5-1/2 + temps and interns

II. RESPONSIBILITY FOR LAND AND WATER ACQUISITION, TRAILS, LAND MANAGEMENT AND FUNDINGS INVOLVING OTHER PUBLIC AGENCIES

A. Land and Water Acquisition

- 1. No longer simple ranch purchases but cultural/historic/botanic/recreation/social considerations for park land locations

a. Standards of criteria

- Conserve a large portion of natural resource land and/or water for the use and enjoyment of the people within a 30-40 mile radius or one hour's drive from or within the metropolitan area
- Offer scenic values and vistas, overlooks and landscapes
- Complete visual protection of areas to the ridge line
- Provide a sense of remoteness from urban areas
- Provide roaming space for leisure, unstructured recreation
- Provide reasonable access and acquire properties so that park facilities can be clustered near perimeter
- Provide water, shoreline and greenbelt in densely populated metropolitan centers

b. Land acquisition factors

- Make purchases of opportunity that set the regional park system program within District financial structure where properties meet the standards above.
- Where possible enter long-term (5 years) payment programs with grantors thereby permitting the purchase price to be at the lowest that it ever will be under existing prospects of increasing land values
- The District seeks to purchase private lands that are otherwise subject to imminent subdivision, planned unit or commercial development before the purchase of more remote lands
- Encourage various tax benefit methods to grantors
- The acquisition of the critical land of a larger land unit intended for park at the earliest date possible thereby setting the park

precedent

- The avoidance of severance damage by the choice of parcels and ownerships
- The acquisition of bay shoreline and bay lands
- The coordinating of all major land acquisitions with state and federal agencies for federal and state financial assistance
- The coordination of acquisition with flood control and water agencies so that maximum public park and recreation participation compatible with water conservation, flood control and navigational programs can be had
- Entering long-term leases on lands owned by other public agencies only provided the EBRPD has critical decision-making powers on alternate or conflicting uses in the future such as roads and capital development
- The recognition that the strongest ultimate protection in the public interest for park lands is fee simple ownership of land

c. Land acquisition tasks

- Land and right of way acquisition
  - Examining and interpreting land titles
  - Preparation and evaluation of appraisals
  - Pre-trial and trial preparation
  - Negotiating, preparing and administering easements, leases, licenses, contracts and documents pertaining to other property rights
2. Coordination with other public agencies including the city and county, BCDC, ABAG, Flood Control, Corps of Engineers, State Clearinghouse, Water Quality Control Board
  3. Much greater citizen involvement

This department, to make a project successful, must coordinate with:

- a. Knowledgeable citizens and identify sponsoring groups as now required by HUD
- b. City and county park supervisors including the Alameda and Contra Costa Park Commissions
- c. Continuous project coordination with appropriate federal and state officials and the direct on-going participation of those officials in the project
- d. Maintain extremely close, accurate and completely creditable relations with the private property owner and his representatives



- e. Maintain extremely close, accurate and completely creditable relations with the public agencies where we are to acquire by lease or management agreement those lands for park and recreation purposes
  - 4. The department either prepares or has prepared for it by another what is now known as the Environmental Impact Report as required by state and federal law
  - 5. Joint Execution of Powers Agreement--device to assist in the accomplishment of the above under certain circumstances
- B. The implementation of the trails program
- 1. Master Plan, 360 miles of which 25 miles are now being actively worked on
  - 2. Types of trails outside regional parks
    - a. Private lands
    - b. Public lands
  - 3. Coordinating with local trails
- C. Land management
- 1. Facility leases. Example: Grazing
    - a. Problems
    - b. Benefits
  - 2. Land stewardship (now being evaluated)
    - Vegetation (native and introduced)
    - Fence lines--predator and non-predator policy
    - Chemicals
      - Pesticides
      - Rodenticides
      - Biological controls
      - Fertilizer, composting, etc.
      - Ownership vs. lesser title
      - Wildlife
      - Fire
      - Grazing
      - Soil erosion, construction placement and water shed considerations
      - Recreational limitations

## D. Funding

1. The grant represents the compiling of all data surrounding a proposed acquisition. The obtaining of the grant is essential to the land acquisition program and is, therefore, part and parcel of the land acquisition responsibility. The critical coordination of the state and federal grant is represented by the fact that over the past seven years approximately 35% of the value of our new fee lands has come from the real property tax base and the balance from federal and state grant assistance.
2. The Department of Housing and Urban Development and the Land and Water Conservation Fund and State Bond grants
3. Other fundings
  - a. Davis-Grunsky
  - b. Recreation Trail Vehicle License, Bill No. 2342
  - c. Recreational Horse License Tax
  - d. Wildlife Conservation Board
4. Demonstration grants
5. Legacy of Parks
6. BART-EBRPD Trail Study
7. Funds for historic sites

## E. Major problems--left for last

1. Discussion of condemnation
  - a. District policy
  - b. Use of private counsel
  - c. Examples:
    - (1) Coyote Hills
    - (2) Brooks Island
    - (3) Huckleberry Botanic Preserve and Trail
    - (4) Coal Mines Area
  - d. Damages in the event of non-taking
2. Restrictions in title
  - a. Affecting land negotiations. Example: Mineral rights.
  - b. Easements and rights of way to adjacent private property. Example: Cull Canyon.

- c. Restrictions pertaining to power lines. Example: Briones and PG&E
  - d. Affecting federal grants. Example: Brooks Island (title description)
3. Removing restrictions to title
- a. Road right of way easement--Las Trampas and Briones
  - b. Power line easement to Brooks Island
4. Situations that develop on private property adjacent to parks and lands designated for acquisition
- a. Apperson Ridge
  - b. Moore property
  - c. Lapham property
  - d. Situations that develop on private property adjacent to parks. Testifying in Washington, D.C., as an intervenor on litigation to have a mining claim removed from federal lands in the Coal Mines Area so that the property can be deeded to the District free of such encumbrance.
  - e. General comments regarding land owners procedure with developers and planning commissions and affect on land value. The District recognizes private property rights until instant of acquisition.
5. Inverse condemnation

Discussion of the affect of over-commitment by public agency on private lands.

CITIZEN'S TASK FORCE  
August 2, 1972 Meeting

*Dorota Chancey*

Development Department  
Explanation Outline

## I. INTRODUCTION

- A. A new funding concept for East Bay Regional Park District
  - 1. Private funds to match state and federal funds
  - 2. Stretches local tax dollar and returns federal dollars locally
  - 3. Provides public benefits with additional parklands and facilities
- B. Conrad Teitel, foremost gift tax attorney, quote on tax supported agencies' need to be privately supported

## II. GIFTS FROM PRIVATE SOURCES

- A. Immediate or Outright gifts
  - 1. Securities, stocks, bonds, cash, insurance policies, annuities, real estate and other property
  - 2. Example: Frederick R. Peake's gift of property
    - a. Commercial property and location
    - b. Peake retains life income and Park District receives income
    - c. District manages property and has authority to sell property by paying to Peake (or wife) the amount of their income value of that property
    - d. Peake's income tax benefits
  - 3. Gifts of appreciated property or securities
    - a. Value when acquired vs. current increased market value results in capital gains tax if sold
    - b. Tax benefits if donated
  - 4. Future program for management of people's money
    - a. Funds to East Bay Regional Park District to invest, upon advice of financial counsel, for couple, widow or widower
    - b. Set percentage of income, by law, paid donor by District annually from donor's earnings
    - c. Donor's income tax benefits and EBRPD benefits

B. Delayed or future gifts

1. Gift made through a will

a. Example

I. Peake's gift of cash placed in a will

II. Meyer's sister's gift of property placed in will

b. Donor's gift benefits heirs by less tax

2. Gifts made in trust during lifetime

a. Example of \$100,000 and \$200,000 left without will

b. Income tax, gift tax, and estate tax benefits, by making gift in trust,  
to donor and heirs

c. District's benefit

C. Corporation Gifts

1. Property donated outright

a. Kaiser's gift of property creating Shadow Cliffs park

b. Matching federal funds received

c. Tax benefits to corporation by making gift

d. Benefits to public

2. Immediate or outright cash donations

a. Doric Development, Inc.

I. Tax benefit to Doric and environmental improvement

II. Benefit to public

b. Tree program

I. Oakland Tribune Plant-A-Tree Program

II. Safeway Stores, Inc.

III. Pacific Telephone Company

D. Cooperative Funding

1. General description

a. Examples of park providing land or building with private source  
providing funds for project

- I. Four youth groups gifts for four shelters
- II. Wee-Ta-Chi Camp Fire Shelter gift
- III. Marksmanship Range
- IV. Orinda Woman's Club
- V. Alameda Rotary Club

- 2. Cooperation between organizations and District
  - a. Benefits to donors
  - b. Benefits to public

E. Development Specialist's gift planning role

- 1. Gives consultation on method of giving and tax advantages resulting from gift
- 2. Contact to organizations and committees
- 3. Refers individual or corporation to their own attorneys and tax consultants to review the gift planned

III. FUNDING THROUGH PRIVATE ENTERPRISE CONTRACTS

A. Examples of private business operating park facilities

1. Willow Park

a. Method

- I. EBMUD lease and lease-management contract
- II. Contract written by County Counsel

b. Results and benefits

- I. 1966 Knox hearings
- II. Golf course and public meeting facilities
- III. Court case concerning interpretation of the contract
- IV. Income to District from lease-management contract

2. Tilden Golf Course

a. Method

- I. Lease-management agreement
- II. Tight contract through own attorneys

b. Results and benefits

I. Grand Jury and Taxpayers Association watching

II. Golf course renovations

III. Income to District from lease-management contract

IV. FOUNDATIONS

A. Introduction

1. Quote from The Money Givers describing foundations

2. Policy:

a. as related to tax supported agencies

b. fields of interest narrowing

c. change from capital purpose grants to innovative program grants

d. grant receiver must be capable of assuming responsibility at end of grant period

B. Tax Reform Act of 1968

1. Private vs. public foundation tax exemption change

2. Small and family foundations forced to close or merge with community foundations

C. EBRPD problems

1. Proposals to foundations must be individual and planned in advance

2. Personal contacts with foundation board members

D. Inter-County Parks Foundation

1. Introduction

a. Pioneer in park field with State Parks and Recreation following our example

b. Public foundation tax exemption granted

c. Method of holding land while awaiting matching federal funds

2. Programs Initiated
  - a. Oakland Tribune Plant-A-Tree program
  - b. Outgrowth of tree program
  - c. Memorial Fund
3. Long range goals
  - a. Planning for future gifts through will and trust.
  - b. Inform public about gift possibilities to Inter-County Parks Foundation
  - c. Inform attorneys about Inter-County Parks Foundation so they can advise clients to make gifts.

V. SUMMARY

- A. Gifts of lands received to date
- B. Gifts of funds received to date
- C. Citizen's Committee cooperation is requested



## UNIVERSITY OF CALIFORNIA

Berkeley  
LAWRENCE ~~BERKELEY~~ LABORATORY  
BERKELEY, CALIFORNIA 94720  
TELEPHONE (415) 843-2740

TELEX 335313 LAWRADLAB BERK  
TWX 910-366-7172 LAW RAD LAB  
CABLE UCLRL BERKELEY

August 3, 1972

Mr. Hulet C. Hornbeck, Chief  
Land and Water Acquisition and Management  
East Bay Regional Park District  
11500 Skyline Boulevard  
Oakland, California 94619

Dear Mr. Hornbeck:

In response to your telephone request and letter of July 11, 1972, I have investigated the possible impact of the Stanford Research Institute's radioactive source work on the public use of the East Bay Regional Park District's Camp Parks property.

I visited the Camp Parks area on July 13, 1972, made a complete tour, and was completely briefed by Mr. William L. White, Dr. David Jones, and Dr. John Krebs of the SRI staff. In addition, I have discussed the matter with James W. Kerr, Assistant Director of Research, Office of Civil Defense at the Department of Defense in Washington; Herbert Book, Compliance Officer in the AEC San Francisco Operations Office; and David Pickler, of the State Department of Public Health, Berkeley office.

At my request, Mr. White furnished me information concerning (1) the original cost of the SRI Camp Parks facility, (2) the cost of moving the operation to some other site, and (3) the cost of surrounding the experimental area with a second 8' cyclone fence at the outer perimeter. A copy of his letter is attached.

As background material, I should note that the cobalt-60 radiation sources are entirely housed in sealed containers at the center of the SRI experimental area. Thus, there is no possibility of radioactive contamination of shoes or clothing at any point outside of or even inside

Hulet C. Hornbeck

- 2 -

August 3, 1972

of the surrounding 8' cyclone fence. The radiation hazard consists of exposure to the gamma rays that travel largely in straight lines from the sources when they are exposed by lifting them out of their shielding, to any points within, at, and beyond the cyclone fence. The exposure rate to a person situated just outside the cyclone fence is such that I wouldn't want to be in that position for more than a total of an hour or so when all the sources are exposed. The radiation exposure to a person at the point closest to the radioactive source on the park boundary, which is protected by only an ordinary barbed-wire fence, is quite low. A person would have to remain at this perimeter continuously day and night for about two months with the four cobalt-60 sources in their exposed positions in order to get an accumulative additional radiation exposure per year equal to that of the ordinary background radiation (to which everyone is exposed wherever he or she lives).

Under these circumstances--and taking into account the fact that visitors to the proposed EBRPD park at Camp Parks could easily, under present circumstances, go through the peripheral barbed-wire fence to the cyclone fence-- I would recommend that the EBRPD park not be operated under present conditions at the site.

In my conversation with Mr. Kerr of the Office of Civil Defense, I learned that the actual experimental work being done for them by SRI with the cobalt-60 sources at their Camp Parks site might be finished within a period of one to two years. If your plans do not provide for opening the EBRPD park at Camp Parks to the public before the expiration of this period of time, I would not recommend that SRI and the Office of Civil Defense be asked to move their operation to another site or to build a cyclone fence around the large outer peripheral area at this time.

I do recommend, however, that when one or more of the cobalt-60 sources are completely exposed, there be at all such times constant surveillance of the area by an attendant present during such experiments.

I recommend further that should the Stanford Research Institute experimental program not be completed before the proposed EBRPD park at Camp Parks is opened to the public, SRI and the Office of Civil Defense be requested to, preferably, move their experiment to another site or, as a minimum requirement, erect a second 8' cyclone fence (some

Hulet C. Hornbeck

- 3 -

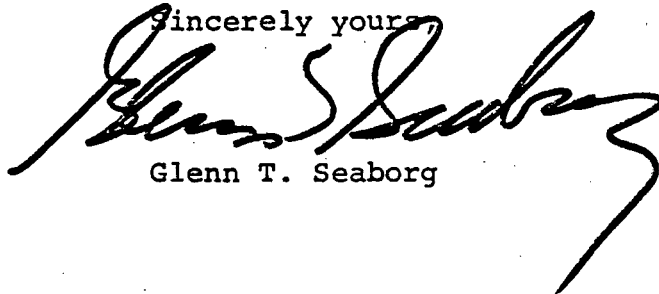
August 3, 1972

14,000 feet long) along the outside perimeter at approximately the position of the existing barbed-wire fence. The decisions to do this would have to be made sufficiently in advance so that this would be completed before the public had access to the park.

I would like to emphasize that I received the best possible cooperation from all the people with whom I conferred in connection with my attempts to help the East Bay Regional Park District resolve this issue. I would also like to compliment you, Richard Trudeau, and the Board of Directors of the District for the conscientious attention given to this important matter.

With best regards,

Sincerely yours

A handwritten signature in black ink, appearing to read "Glenn T. Seaborg". The signature is written in a cursive style with a long, sweeping tail that extends downwards and to the right.

Glenn T. Seaborg

GTS/sms

enc.



STANFORD RESEARCH INSTITUTE  
 MENLO PARK, CALIFORNIA 94025  
 (415) 323-6200

July 31, 1972

Dr. Glenn T. Seaborg  
 Lawrence Berkeley Lab  
 University of California  
 Berkeley, California 94720

*SM 8/2/72*

Dear Dr. Seaborg:

We have assembled the following information in answer to the questions you asked during our visit to Camp Parks on July 13, 1972:

1. The documented original cost of the cobalt range, built in 1961-1962, is about \$120,000. To this, another \$60-\$80,000 should be added to account for the use of surplus property and equipment, and for free labor available at the Camp.
2. The cost of moving the operation to some hypothetical site such as the SRI Corral Hollow Experimental Site is estimated to be \$122,000. In addition, there would be an additional \$5,000 to \$20,000 for renting a Department of Transportation approved container for moving the source/plug units; the amount would depend on the distance to the new site. This estimate does not include fencing, which would depend on the configuration of the site. Some idea of this cost is given below in the estimate for fencing the present perimeter.
3. An 8' cyclone fence on the terrain surrounding the sources at Camp Parks would be about \$7.00 per foot. To fence the existing perimeter (14,100 feet) would cost \$98,700. To fence the common boundary only (2,800 feet) would be \$19,600.

The estimates summarized above are based on more detailed data, which we will be pleased to make available.

Sincerely,

W. L. White

The program committee of the Nuclear Chemistry Division held its regular biweekly bag lunch meeting in my office. Present were Cerny, Diamond, Edelstein, Glendenning, Harvey, Hyde, Perlman, Poskanzer, Street, Templeton, and Thompson. Earl announced that the July 1 salary raises had not gone into the payroll machinery for the August 1 paychecks, but should appear retroactively on the September 1 check; he asked everyone to inform their staffs.

I briefly described the funding problems to be solved in the AIP funds meeting to be held tomorrow. Earl reviewed Director McMillan's request for program justifications for building projects, which arrived just before this meeting. Dick Diamond announced that the first allotment for equipment is \$43,000 and that the Equipment Committee will meet within a week. Earl described the background and status of the grievance complaint of Mathilde Kland-English. We discussed the general need for written employee performance reviews, particularly for those who are weak. I advised the committee about the phone calls of Dr. Molly Gleiser. I also described the impending visits of several people, possibly including Commissioner Doub. Ken Street reviewed the status of our foreign travel budget, which is almost totally committed for the fiscal year. Norman Glendenning announced that, starting next Tuesday, Walter Greiner will give a series of 2-3 Nuclear Theory seminars. Sven-Gosta Nilsson will also be speaking. Earl announced that the first outside user of the SuperHILAC, Hans Gutbrod, has arrived.

I called Alvin Baum at his Overview Office in connection with the report he gave at the Citizens Task Force meeting on "Tentative Criteria for Evaluating Proposed Acquisition Sites." I pointed out that walking paths and hiking trails should be listed under need or demand, and he said he would put this in. We discussed last night's meeting and tour of Point Pinole and set a lunch date for August 16.

Eugene Huffman came by and told me he has decided not to undertake the task of helping me put the Met-Lab Section C-1 material into publishable form.

Lynne drove me home from work because Dave was using the Bonneville to go hunting for a place to live in Berkeley when he goes to school there this fall. Lynne and Bill then drove to San Pablo to pick up a truck that they will be using to move Steve's things to Davis. Dave had an appointment with Dr. Edward Ringrose, a Berkeley dermatologist, to have him cut out a little growth above his eyelid.

Friday, August 4, 1972 - Berkeley

Dave rode in with me. Steve drove his rented Hertz truck, full of furniture for the rented house he will share with his friends next school year, to Davis.

John Mayor called me from AAAS headquarters at 9:00 a.m. We discussed the selections for the Znanie exchange. He said he is inclined to see if we can't select four from this country, choose them as we would like, and try to get more information from them so that he can draft a schedule. He just received the list from the biologists, but is still prodding the ACS. We agreed that if we are going to use

Friday, August 4, 1972 (con't)

the criteria set forth in Yuorij Fishevsky's letter, we won't get the right input...though we concurred that we ought to get someone from the environment and ocean resources areas, but found "management" vague. He will call me when he has 8-10 names to review, probably next Monday morning. In the meantime, I suggested Roger Revelle and Jack Hollander as possibilities. In response to my query about funding, he said that we pay the expenses in the United States and travel to the USSR; the USSR pays internal expenses and travel to the United States.

From 9:10-9:25 a.m., I met in my office with Dr. John E. Cummings, who is with the new Division of Applied Technology of the AEC in Washington and is here to investigate our interests and capabilities in the fields of new energy sources--especially solar. We were joined by Jack Hollander, Mike Wahlig, and Marshall Meriam. (After the meeting, Jack told me that Spof English has been in touch with him concerning possible interest of Andy Sessler in the job as Director of Research of the AEC.)

At 11:30 a.m., I drove to San Francisco to attend the regular Friday meeting of the Commonwealth Club in the Gold Ballroom of the Sheraton-Palace Hotel, where Peter Flanigan was the speaker. I sat at the head table between James W. Halley (Attorney, Halley and Cornell) and Morgan J. Smith (General Manager, Sheraton-Palace Hotel); also at the table were Durward S. Riggs (Executive Secretary, Commonwealth Club), Richard P. Cooley (President, Wells Fargo Bank), Club Vice President Bruce T. Mitchell (Senior Counsel, Utah International, Inc.), Quarterly Chairman Dean Daskarolis (Insurance Broker); Eric Harder (Consul, German Consulate), Leonard L. Born (Management Consultant), the Honorable A. Frank Bray (Presiding Justice, Court of Appeal [Retired], and Chairman of the Club's Luncheon Program Committee), and Pete Flanigan (Assistant to the President for International Economic Affairs, and Executive Director of the Council on International Economic Policy). Flanigan was introduced by Daskarolis and spoke on "A New Dimension for U.S. Trade." He emphasized the recently initiated trade with the Soviet Union and the Nixon policy of replacing confrontation with negotiation. It was a good speech, and Flanigan handled the questions that followed very well. I spoke to him briefly, mentioning the impending program of cooperation between the AAAS and Znanie, and indicated that I would send information to him and Ed David on this.

From 2:30-4:15 p.m., I attended a meeting in Edwin McMillan's office which was being held for the purpose of determining the distribution of the limited Accelerator Improvement Program (AIP) funds, which are oversubscribed (in terms of requests within the lab) by a factor of 3 times. Present were Kenneth Crowe, James Vale, Dick Connell, George Pappas, Bob Main, Albert Ghiorso, George Bondurant, Bernard Harvey, David Clark, Earl Hyde, Elmer Kelly, Robert Hinckley, Ed Lofgren, Walter Hartsough, Hermann Grunder, Tommy Elioff, etc.

The meeting was conducted by Pappas, who called on representatives of the Bevatron, 184" cyclotron, 88" cyclotron, and HILAC to make presentations of their cases. Harvey spoke for the 88" and

Ghiorso and Main for the HILAC. Following these, I made a general statement pointing out the high national and international priority for heavy ions, the allocations of AIP funds preferentially to the Bevatron in previous years, the stringent budget situation with respect to the Nuclear Chemistry Division this year, the need to get the underfinanced SuperHILAC operating from the standpoint of the image of the lab, and the consequent conclusion from all of these factors that, for a year or two, the heavy ion work at LBL should be favored.

After this, McMillan made the surprising and shocking statement that the allocation of the funds (total \$525,000) would be \$400,000 to the Bevatron, \$120,000 to the HILAC (for the Machine Parameter Digital System and Real Time Control needed for the BEVALAC), with nothing for the absolutely essential SuperHILAC cave system and nothing for the 88" and 184" cyclotrons. Besides the obvious bias of the decision, the fact that it was clearly determined before we entered the meeting was even more disturbing.

I expressed my displeasure in no uncertain terms and indicated to McMillan that he had made a serious mistake so far as the overall welfare of the lab was concerned. At this point, Hyde, Ghiorso, Main, Harvey, Clark, and I left the meeting rather abruptly to further express our displeasure.

I worked in the back yard at the ditch as I have done each evening this week except Wednesday. This was Lynne's last day of work at Alumni House in Berkeley.

Saturday, August 5, 1972 Lafayette

After spending the night in Davis, Steve returned his rented truck to Hertz in San Pablo. His friend Katrina Price was with him and they had lunch with us. After, they went to spend the night at their friend Brent Huber's house in Kentfield. I spent most of the day building a trail along the redwood trees at the back of our yard along the ditch. McGovern announced Sargent Shriver as his Vice Presidential running mate today.

Sunday, August 6, 1972 - Lafayette

I worked on the trail at the back of our yard in the morning and on Travels in the New World in the afternoon. Steve drove Katrina back to Davis and visited with friends there. Bill Howe, Dave's friend from Washington, came to spend a couple days with us; he graduated from Whittier College and is now going to the University of Arizona Medical School for a Ph.D. in molecular biology.

Lynne, with Helen's help, played the role of hostess to a number of her classmates at Stanley School at a buffet supper at our house from 7:00-10:30 p.m. Present were Lynne (Wiggins) and John Averett, Carol (Walters) and A. Lloyd Larson, Greg Malley, Julie (Smith) and John Peterson, Karen (Wagner) and Tom McQueen, Susie (Fee) and Patrick T. Clarkson, Nancy Chappell, Andy, Meeme and Soche Picard, Hope (Julius) and Skip Stress, Kay Yamaguchi and Mr. Yamaguchi, Marian Julius, Rosemary Shepard, Mr. and Mrs. Fred Wagner, Jeffrey and Becky

(Chamberlain) Smith, Ruth Dietz, Sally Hewitt, and William Howe. It was a very enjoyable evening with much reminiscing. Mrs. Yamaguchi, English teacher for Lynne and her friends, added much to the evening; Dianne took English from her last year and Mrs. Yamaguchi regularly referred to her as "Lynne." She presented us with a ceramic plaque from Adelphi, Greece (from which she has just returned).

Monday, August 7, 1972 - Berkeley

Helen drove me in to work because the car was needed at home today (Steve still has the station wagon at Davis). Dave took the day off from work to guide Bill Howe (in Bill's car) to San Francisco for some sightseeing, then to Davis to pick up his sister Lucinda who is spending the night with us, then back to San Francisco for dinner at Joe DiMaggio's and a lecture at the California Academy of Sciences.

I wrote Brian Reynolds, executive director of the American Academy of Achievement that I would be glad to serve as a member of the Golden Plate Awards Committee which will select the 1973 Golden Plate recipients (copy of incoming letter attached).

From 9:00-9:45 a.m., I attended a meeting of the SuperHILAC planning group. Present were Ghiorso, Nurmia, Nitschke, the Alonsos, and the Eskolas. Al told us about the breakdown of the Eve injector last Friday which stopped the experiments then. He also described electric field insulation breakdown problems in SASSY, which has brought its use to a stop until the trouble is diagnosed.

During the morning, I discussed with Ghiorso, Harvey, Hyde, and Perlman the possibility of my resigning my position as Associate Director of the Lawrence Berkeley Laboratory. This would be based on broad dissatisfaction with the administration of the lab, particularly as it pertains to the lack of appreciation of the importance of nuclear chemistry in the total picture, and not primarily because of the extraordinary displeasure displayed at the AIP funds meeting.

I had lunch with Dan Wilkes in the cafeteria in order to bring him up-to-date on the possibility of my resigning and to discuss the possible wording of my letter of resignation.

I called Bill Bevan at AAAS in Washington. He indicated that he will be meeting with Walter Berl this afternoon and expects that Walter will work within the limits set down in Bevan's strong memorandum (of which I had just received a copy). I indicated that I was confused about all of the committees attached to the Mexico City meeting, and we reiterated that only the Board was in a position to appoint the respective committees which are working on the meeting. He supported my idea of sending copies of the Fishevsky-Bevan correspondence to some people in the White House--Ed David, Pete Flanigan, Henry Kissinger--which I said I would do. I also wrote Philip Handler in this regard.

John Mayor called to report on his meeting with Bill Bevan to select the American scientists for the Znanie exchange; they chose Melvin Calvin, David Grant, Alton Lang, and Frederick Doyle. The first alternate is Paul Doty; the second alternates are Norman Borlaug



A non-profit tax-exempt organization dedicated to the Inspiration of Youth — to raise their sights high, to excel in their endeavors — through the dramatic annual salute, at the Banquet of the Golden Plate, to Captains of Achievement from America's great walks of life and honor students from across the nation.

## GOLDEN PLATE AWARDS ADVISORY COMMITTEE\*

### CHAIRMAN

LOWELL THOMAS  
Author - Radio/TV - Cinemas

DR. MICHAEL E. DeBAKEY  
1967 "Doctor of the Year"

DR. EDWARD TELLER  
Nuclear Physics

DR. HAROLD C. UREY  
Nobel Prize in Chemistry

JAMES A. MICHENER  
Pulitzer Prize Novelist

LEON JAWORSKI, President  
American Bar Association

DR. NORMAN BORLAUG  
Nobel Prize for Peace

JOHN WAYNE  
All-Time Box Office Champion

MARY WELLS LAWRENCE  
"Advertising Woman of the Year"

BOBBY ORR  
All-Time Hockey Star

HOBART LEWIS  
Editor of Reader's Digest

DR. WILLIAM J. KOLFF  
Inventor—Artificial Kidney

LOUIS I. KAHN  
Architect Gold Medalist

IRVING STONE  
Biographical Novelist

PROF. HERBERT C. BROWN  
National Medal of Science

LEO CHERNE  
Political Science - Economics - Law

TURNER CATLEDGE  
"My Life and the Times"

ERWIN D. CANHAM  
Editor of Christian Science Monitor

SHIRLEY TEMPLE BLACK  
Hollywood-United Nations

ALLEN DRURY  
Pulitzer Prize for Fiction

LOUIS NIZER  
Law and Literature

WILLIAM WYLER  
Motion Picture Direction

MARQUIS W. CHILDS  
Pulitzer Prize Washington Reporter

ALAN KING  
Master Monologist

DR. WILLIAM PICKERING  
Interplanetary Exploration

TERRY BRADSHAW  
All-American Quarterback

GEORGE SHEARING  
Pianist - Composer - Arranger

POLLY BERGEN  
"America's Best Women Executives"

WALTER LANTZ  
"Creator of Woody Woodpecker"

GEORGE CUKOR  
Oscar for "My Fair Lady"

E. C. KENDALL  
Nobel Prize - Cortisone Discoverer

ASTRONAUT JAMES A. LOVELL  
Conquest of Space

DR. ROBERT M. HALL  
"Jet-age Tools for the Surgeon"

CHARLES B. THORNTON  
"Industrialist of the Year"

DR. C. H. LI  
Hormone Research

ROBERT STACK  
Television "Emmy" Award

CHARLES LUCKMAN  
Architect-Businessman-Lecturer

LAWRENCE E. SPIVAK  
"Meet the Press"

DR. WM. H. GOETZMANN  
Pulitzer Prize for History

J. WILLARD MARRIOTT  
The Marriott Corporation

CHINN HO  
"Trans-Pacific Empire"

DAVID WOLPER  
"Mr. Documentary"

PHILIPPE HALSMAN  
101 Covers for Life Magazine

KEMMONS WILSON  
Holiday Inns of America

STAN MUSIAL  
Baseball Immortal

\* partial listing . . . each a past Golden Plate Award recipient

AMERICAN  
ACADEMY OF ACHIEVEMENT



MAURICE WARSHAW  
"Salute to Excellence" Chairman

August 1, 1972

Dr. Glenn T. Seaborg  
University of California  
Lawrence Radiation Laboratory  
Berkeley, Calif. 94720

Dear Dr. Seaborg:

On behalf of the entire Academy, thank you again for your role in the recent Salute to Excellence program!

Now we invite you to serve -- by devoting only a few minutes of the entire year -- as a member of the Golden Plate Awards Committee which will select, under the renewed chairmanship of Mr. Lowell Thomas, our Golden Plate recipients for the next Banquet of the Golden Plate . . . sometime late next June in a city not yet chosen.

Perhaps once or twice in the next six months we would send you a prepared -- but undated -- letter of invitation for a nominated guest of honor from your special area of interest. Should such nomination meet your enthusiastic approval, you would sign the letter as a member of the Committee, and simply mail it back to our headquarters.

Your service in this respect requires no funds or other duties\* . . . but the Academy gladly extends a complimentary invitation to the annual "gathering of the greats" for members of the Awards Committee whose schedules permit a return to the weekend program.

To facilitate your speedy response, you may simply write "Yes!" at the bottom of this letter . . . and return it in the envelope, stamped and enclosed as always for your convenience.

We look forward to your invaluable service and guidance.

Warmest regards,

*Brian Reynolds*

Brian Blaine Reynolds  
Executive Director

BBR:jf

\* However, all Golden Plate recipients are invited to donate \$25 or more each year toward the Salute to Excellence weekend. (Did our old office at Cody return your \$50 check of several months ago which was not necessary for your wife's participation?)

NEW NATIONAL HEADQUARTERS

P.O. Box 191 \* La Jolla, Ca. 92037 \*714-454-6806

P.O. BOX 1307 SALT LAKE CITY, UTAH 84110 (801) 247-8818

# Board of Governors\*

## CHAIRMAN OF THE BOARD

GLENN E. NIELSON, Chairman, Husky Oil Company, Cody, Wyoming

## "SALUTE TO EXCELLENCE" CHAIRMAN

MAURICE WARSHAW, President, Grand Central, Inc., Salt Lake City, Utah

## PRESIDENT

JOHN O. TODD, C. L. U., Todd Planning and Service Co., Evanston, Illinois

## FINANCIAL CHAIRMAN

JOHN W. ROLLINS, Chairman, Rollins International, Inc., Wilmington, Delaware

## CHAIRMAN OF HONOR STUDENT SPONSORS

RILEY V. SIMS, Chairman, Burnup & Sims, Inc., West Palm Beach, Florida

## VICE PRESIDENTS

HAROLD BRAYMAN  
Retired Director of Public Relations  
E. I. DuPont De Nemours & Co.

JACK H. McDONALD, President  
Imperial Corporation of America  
San Diego, California

MURIEL SIEBERT  
First Woman - N. Y. Stock Exchange  
New York City

DR. ROBERT M. HALL, President  
Hall International  
Santa Barbara, California

BEURT SERVAAS, President  
Curtis Publishing Company  
Indianapolis, Indiana

GRANT TAGGART, Director  
California-Western States Life  
Cowley, Wyoming

## SECRETARY

DR. RICHARD EMERY, Superintendent  
Hennepin County Vocational Schools  
Minneapolis, Minnesota

## GOLDEN SCROLL CHAIRMAN

DR. CLEOFAS CALLEROS  
Artist-Historian-Civic Leader  
El Paso, Texas

\* Each board member is a past recipient of the Golden Plate award

## OTHER MEMBERS OF THE EXECUTIVE COMMITTEE \*\*

LEO BEEBE, Exec. VP/Gen. Mgr.  
Philco-Ford Corporation  
Philadelphia, Pennsylvania

GEORGE JENKINS, President  
Publix Super Markets, Inc.  
Lakeland, Florida

DEAN A. MCGEE, Chairman  
Kerr-McGee Corporation  
Oklahoma City, Oklahoma

GEORGE E. CARLSON, Chairman  
Minnesota Rubber Company  
Minneapolis, Minnesota

W. W. KEELER, Chairman  
Phillips Petroleum Company  
Bartlesville, Oklahoma

ROY T. PERAINO, President  
Continental Bank  
Philadelphia, Pennsylvania

HARRY CHADDICK, President  
Harry F. Chaddick Associates, Inc.  
Chicago, Illinois

DR. KOJI KOBAYASHI, President  
Nippon Electric Co., Ltd.

MELVIN D. SKOLNIK, Chairman  
American Postal Corporation  
New York City

W. W. CLEMENTS, President  
Dr Pepper Company  
Dallas, Texas

CYRIL MAGNIN, Chairman  
Joseph Magnin  
San Francisco, California

FRANK E. SULLIVAN, C. L. U.  
South Bend, Indiana

ROBERT E. GREEN, President  
Green Construction of Indiana  
Oaktown, Indiana

I. W. MARRIOTT, Chairman  
The Marriott Corporation  
Washington, D. C.

ASHER THOMPSON, President  
Investors, Inc.  
Lubbock, Texas

JAMES HAIT, Chairman  
FMC Corporation  
San Jose, California

WM. K. H. MAU, Owner-Developer  
Waikiki Business Plaza  
Honolulu, Hawaii

KEMMONS WILSON, Chairman  
Holiday Inns of America  
Memphis, Tennessee

TATSUZO MIZUKAMI  
Retired Chairman  
Mitsui & Co.

\*\* Each Executive Committee member is a past Golden Plate honoree and now an executive contributor

## Executive Donors

John W. Rollins	Maurice Warshaw
Rollins International	Husky Oil Company
Green Construction of Indiana	Reader's Digest
The Marriott Corporation	DeWitt Wallace Fund, Inc.
Ford Marketing Corporation	Ford Motor Company Fund
George Jenkins Foundation	Harry F. Chaddick Associates, Inc.
Harold Brayman	Hall International
Imperial Corporation of America	

## Executive Sponsors

Anastasi Brothers	Dynetics Corporation	Pennstar Company
Herbert Barnes	Hess Foundation	Phillips Petroleum
George E. Carlson	Holiday Inns of America	Ship 'N Shore, Inc.
Chilton Company	Kerr-McGee Corporation	Muriel Siebert & Co., Inc.
Continental Bank of Philadelphia	Cyril Maguin	Burnup & Sims, Inc.
Curtis Publishing	Marsh & McLennan, Inc.	Melvin D. Skolnik
Dr Pepper Company	William K. H. Mau	Frank E. Sullivan, CLU
FMC Corporation	Mitsui & Co., Ltd.	Grant Taggart
F P A Corporation	Mushroom Transportation Co.	Asher Thompson
First Pennsylvania Bank	NEC America, Inc.	John O. Todd, CLU

## Major Sponsors

Aldon Industries, Inc.	Exhibit Sales, Inc.	Mrs. John Leddy Jones	The American Legion
John S. Bellinger	John W. Hill Foundation	Walter Lantz Foundation	Veterans of Foreign Wars
Robert G. Dunlop	Inspiration, Inc.	Safeguard Industries	Henry M. Watts, Jr.

## State Chairmen of Student Sponsors

GALEN L. COLE, President Cole's Express Bangor, Maine	W. W. KEELER, Board Chairman Phillips Petroleum Company Bartlesville, Oklahoma	J. R. SIMPLOT, President J. R. Simplot Company Boise, Idaho
GEORGE JENKINS, President Publix Super Markets, Inc. Lakeland, Florida	JACK H. McDONALD, President Imperial Corporation of America San Diego, California	HENRY B. SARGENT, JR., Vice President Arizona Public Service Company Phoenix, Arizona
	JOHN W. ROLLINS, SR., Chairman Rollins International, Inc. Wilmington, Delaware	

# Honorary Board of Trustees

SPIRO T. AGNEW U. S. Vice President	MAURICE R. GRAVEL Senator of Alaska	CLAIBORNE PELL Senator of Rhode Island
FORREST H. ANDERSON Governor of Montana	WILLIAM L. GUY Governor of North Dakota	RUSSELL W. PETERSON Governor of Delaware
WALTER ANNEBERG Ambassador to Great Britain	CLIFFORD P. HANSEN Senator of Wyoming	WALTER PETERSON Governor of New Hampshire
BIRCH BAYH Senator of Indiana	VANCE HARTKE Senator of Indiana	WILLIAM PROXMIRE Senator of Wisconsin
WALLACE BENNETT Senator of Utah	STAN HATHAWAY Governor of Wyoming	CALVIN L. RAMPTON Governor of Utah
EDWARD W. BROOKE Senator of Massachusetts	WARREN E. HEARNES Governor of Missouri	JENNINGS RANDOLPH Senator of West Virginia
JOHN A. BURNS Governor of Hawaii	REV. T. M. HESBURGH, Pres. University of Notre Dame	ROBERT D. RAY Governor of Iowa
ALFONSO J. CERVANTES Mayor of St. Louis	ROMAN L. HRUSKA Senator of Nebraska	GEORGE ROMNEY Sec. of Housing & Urban Renewal
FRANK CHURCH Senator of Idaho	HENRY M. JACKSON Senator of Washington	FRANK A. ROSE, President University of Alabama
KENNETH M. CURTIS Governor of Maine	TOM McCALL Governor of Oregon	FRANKLIN D. SCHURZ, Publisher South Bend Tribune
RICHARD J. DALEY Mayor of Chicago	GALE W. McGEE Senator of Wyoming	FRANK A. SEDITA Mayor of Buffalo
DEANE C. DAVIS Governor of Vermont	JOHN J. McKEITHEN Governor of Louisiana	PRESTON SMITH Governor of Texas
JOE M. DEALEY, President The Dallas Morning News	FELIX McKNIGHT, Editor Dallas Times-Herald	LAUREN SOTH, Edit. Director Des Moines Register & Tribune
ROBERT DOCKING Governor of Kansas	WARREN G. MAGNUSON Senator of Washington	JOHN SPARKMAN Senator of Alabama
PETER H. DOMINICK Senator of Colorado	JACK MILLER Senator of Iowa	STUART SYMINGTON Senator of Missouri
THOMAS F. EAGLETON Senator of Missouri	FRANK E. MOSS Senator of Utah	STROM THURMOND Senator of South Carolina
DANIEL J. EVANS Governor of Washington	LOUIS B. NUNN Governor of Kentucky	JOHN F. TIMS, Board Chairman New Orleans Times-Picayune
M. J. FREY, President Portland Oregonian	RICHARD B. OGILVIE Governor of Illinois	JOHN G. TOWER Senator of Texas
JESS GORKIN, Editor Parade Magazine	ROBERT W. PACKWOOD Senator of Oregon	LOUIE WELCH Mayor of Houston

# National Advisory Council

LESTER G. BENZ, Executive Secretary, Quill and Scroll Society  
 EDWARD L. BURNHAM, Director, Voice of Democracy, Veterans of Foreign Wars  
 J. L. BUTT, Executive Secretary, American Society of Agricultural Engineers  
 HARRY E. ELLIS, Director of Public Relations, Dr. Pepper Company  
 WILLIAM PAUL GRAY, National Executive Secretary, Future Farmers of America  
 MRS. ANGELINE KROUT, CPS, International President, The National Secretaries Association  
 MICHAEL LANTZ, President, National Sculpture Society  
 DR. LLOYD S. MICHAEL, Professor of Education, Northwestern University  
 EDWARD D. MILLER, Director for Leadership Development, Future Business Leaders of America  
 TOM PERRYMAN, President and General Manager, WIL Music, Inc.  
 ED WIELAND, Director, Education and Scholarship Program, The American Legion

and Ralph Emerson. We agreed that I would call the invitation to Calvin and he will call the others in my name.

Steve returned from Davis about mid-day. I continued my yard work, clearing the ditch along our row of redwood trees.

Tuesday, August 8, 1972 - Berkeley

I spent a good part of the day working on my manuscript for the Copernican volume. I sent Philip Handler, Edward David, Henry Kissinger, and Harrison Brown copies of the correspondence concerning the Znanie exchange. I also wrote to Yuorij Fishevsky about this (copy attached).

At 9:00 a.m., I met with Mathilde Kland-English at her request to discuss her job situation. I mentioned the fact that my son David and her daughter Lynn had been friends at Davis. Mostly, I listened to her account of her problems in securing employment. I suggested that she check again with Tania Nutting in the Lab Personnel Department and, if the results there were still negative, I said I would call Arthur Hudgins at Livermore about her applications there.

I phoned Melvin Calvin at 10:20 a.m. to invite him to be one of the four American scientists whom the AAAS will send to the Soviet Union under our exchange program with the Znanie Society. He said he will discuss it with his wife and let me know. If he goes, he would prefer to do so in the spring quarter and perhaps combine it with another task (he is chairman of the American part of the joint publication on space and medicine). I indicated that the length of the visit would be up to him--it could be a week or a month. I asked him to become the lead man in connection with our solar energy program, since no one knows more than he does about all three approaches required--chemistry, physics, and engineering. He replied that he will talk with Jack Hollander, who will describe the kind of phone calls that need to be made this week.

At 10:30 a.m., I heard Greiner talk on the production of positrons from quasi-molecular extra heavy nuclei in the Building 70 conference room. After this, I dropped by to talk to Liljenzin and Kratz in their lab. They are finding that HI is good for the elution of gold.

I had lunch in the cafeteria at the lower level with Walter Greiner and a group including Diamond, Stephens, and others. We continued the discussion of the production and observation of positrons produced from quasi-molecular nuclei in bombardments such as uranium on uranium, and methods of detection of such positrons in the presence of other positrons produced as background. I also discussed with Greiner a possibly long-term collaboration between Berkeley on the one hand and the University of Frankfurt and the Darmstadt heavy ion accelerator on the other, in which the work would be carried on here for the first few years and then at Darmstadt. Greiner said he thought this was very desirable and felt positive that the people at Darmstadt and Frankfurt will feel the same if I take the initiative in discussing it with them during my forthcoming visit there.

U.S.A.

August 8, 1972

Professor Y. Fishevsky  
First Deputy Chairman  
Znaniye Board  
Tsentr, proyezd Serova, 4  
Moscow, U.S.S.R.

Dear Professor Fishevsky:

I am delighted to learn, through your correspondence with William Bevan, that arrangements are being completed for the development of scientific contacts between the AAAS and the All-Union Society "Knowledge."

Dr. Bevan will send to you within a few weeks the names of the American scientists to visit the Soviet Union. He will also send you information on itineraries for the Soviet guests in the United States as soon as he learns from you the names of these scientists, their fields of specialization, and the dates of their visits.

My visit in the Soviet Union between September 3 and September 9 will be confined to Moscow. I would like very much to have a meeting with you and your colleagues sometime during that interval in order to further discuss future plans for the cooperation between the AAAS and the All-Union Society "Knowledge." Perhaps you could arrange with Professor V. I. Spitsyn, Director of the Institute of Physical Chemistry--and under whose auspices I will be attending and speaking at a Symposium on the Chemistry of the Transuranium Elements--for a suitable time for my meeting with you and your colleagues.

Cordially yours,

Glenn T. Seaborg

GTS/sms

cc: William Bevan

As I was leaving the cafeteria, I ran into T. Darrah Thomas, who is here for a few days setting up experiments at the HILAC on behalf of the Users Group.

Following calls to Bernard Harvey (who indicated that he is willing to forego \$150,000 worth of general plant project funds for an addition to his Building 88) and to Al Ghiorso (confirming that this might legitimately be used for the HILAC cave project which was rejected at the AIP meeting), I talked to George Pappas (who was visiting in Earl Hyde's office) to request this switch of funds. He indicated that he would proceed to try to do this.

Steve and Dianne drove me home from work. Just before dinner, I worked in the back yard clearing the ditch some more. Lynne and Bill are still packing for Lynne and Steve's drive to Lafayette, Indiana. Lynne has been suffering from a cold which has delayed their departure until Thursday.

We had a birthday dinner for Steve--his 21st which will actually take place next Monday (the 14th) when he will be on the road east with Lynne. Present were Helen, Dave, Dianne, and me, as well as Bill and Lucinda Howe who had spent the day sightseeing. Lucinda is planning to start school at Davis in the winter or spring quarter. She has been going to school at California Western in San Diego and will be working there until she starts at Davis.

I called Florene White in South Gate to ask her the selling price of the 60-foot parcel of land next to our house at 9237 San Antonio Avenue. She told me that her asking price is \$20,000, but indicated she would write me to state the best possible price and terms.

Wednesday, August 9, 1972 - Berkeley

Helen drove Dave and me in to work as both cars are needed at home today. I spent a good part of the day working on my manuscript for the Copernican volume.

The SuperHILAC produced its first radioactive isotopes today--the production of alpha emitting isotopes of erbium from the reaction of carbon-12 ions on samarium. This is a tune-up experiment for Hulet's forthcoming work on the chemistry of element 104, to be produced by oxygen-18 ions on curium-248.

I walked down to the campus just before noon and picked up Errol Mauchlan in the Chancellor's Office at California Hall. We walked to Larry Blake's Restaurant for lunch. We had a pleasant hour reminiscing about our days together in the Chancellor's Office. He also brought me up-to-date a little on the intervening years during which he has served Chancellors Edward Strong, Martin Myerson, Roger Heyns, and Albert Bowker. I told him about my hope to have my Chancellor's files xeroxed in order to complete my career records and my talks with Zelma Gelling (on September 18, 1969) about this. He agreed to raise the question again with Zelma and have her get in touch with me.

I went down to Building 88 to attend the 4:00 p.m. ceremony for the award of the 25-year service pin and certificate to Robert J. Cox,

Wednesday, August 9, 1972 (con't)

one of the 88" cyclotron operators. A group of 20-30 people was assembled by Bernard Harvey in the area around the coffee urn in the presence of a huge 25th anniversary cake. I made the presentation to Cox with a few words of commendation. The cake was then cut and served to all present.

Lynne and Bill joined us for dinner--which will be Lynne's last with us prior to her departure with Steve tomorrow for Indiana. They found out this afternoon, to their dismay, that their Volvo does not have enough power to pull the U-Haul trailer uphill. Thus, it probably couldn't be pulled across the Rockies, and certainly not on any side sightseeing trips in the mountains. The problem was complicated by the fact that they had already attached the trailer to the Volvo. After a serious discussion of alternatives at dinner, it was decided that Lynne and Steve would take the Bonneville, leaving the Volvo with us until Lynne and Bill return for a visit at Christmas when we would exchange cars. They then went down to the garage in El Sobrante and had the trailer disconnected from the Volvo and connected to the Bonneville. They spent the night with us, having completely moved out of their Piedmont cottage. Bill will be staying with us until he finishes his summer quarter at California State University at Hayward.

From 8:00-10:00 p.m., I attended a meeting arranged by Lafayette City Councilman Walter H. Costa in the Veterans Memorial Building in Lafayette. The purpose of the meeting was to discuss the acquiring of land for hiking rights for a complete trail system in Lafayette. A trail twelve miles long encircling Lafayette was discussed. This would go around the reservoir and along the Sacramento Northern right-of-way, along Lafayette Ridge, then over Bill McKee's land and through Happy Valley, back to the starting point. This is consistent with the East Bay Regional Park District's plans for a trail connecting Los Trampas Regional Park with Briones Regional Park, using the Sacramento Northern right-of-way and Lafayette Ridge.

Present at the meeting were Kenneth Brown, Clay Gelhaus, William McKee and Dana Murdock (land owners along Lafayette Ridge--Murdock representing Sessions, a land owner), Kay Petersen (wife of Chemical Engineering Professor Eugene E. Peterson who owns land on Deer Trail Road giving access to Bill McKee's property), Ned Robinson (Lafayette Councilman), Lee Jorgenson and Bill Hartman of the East Bay Water District, Bill Dalton of the East Bay Sanitary District, and Gary Tate of EBRPD.

It was agreed that the Sacramento Northern right-of-way is available. Further discussions with property owners along Lafayette Ridge, especially Dr. Percy Jennings, are necessary and will be arranged by Costa and will hopefully include Hulet Hornbeck--a meeting will be held for this purpose soon. McKee pointed out that another (third) entrance to Briones Regional Park could be opened up by proceeding from the top of Panorama Road through his and University of California property to the park. I said that I would be glad help obtain permission from the University. Tate was especially interested in this possibility and will explore it further by going over the



property with McKee this weekend. Hartman told me that the upper level peripheral trail around Lafayette Ridge will probably be open to the public within a matter of months.

Thursday, August 10, 1972 - Berkeley

Lynne and Steve started out this morning on their long drive to Indiana, with the plan of stopping at Moline, Illinois to visit Jody, Bill's sister, who will be visiting Bill's and her mother and step-father there next Tuesday and Wednesday. I rode in to work with Dave.

At 10:00 a.m., I attended a meeting of the SHE Chemistry Group in the conference room of the HILAC Building with Ghiorso, Hulet, Kratz, Nitschke, and Liljenzin. We discussed plans for the impending experiments on the chemistry of element 104 using the automated apparatus.

At 10:30 a.m., we started the meeting of the larger SuperHILAC Research Group. Nurmia gave a report on recent research in other laboratories ("HILAC Hilites"). Ghiorso gave a status report on the SuperHILAC and Greiner continued his talk of last week. Stephens then described a planned experiment to detect the positrons produced from quasi-molecular nuclei formed in uranium-uranium collisions, i.e., positrons from K-holes in  $Z = 184$ . The product might be called a "superheavy quasi-molecular nucleus."

After the meeting, I talked with Hans Gutbrod who is here as a visitor from Darmstadt and told him of my forthcoming visit there. I also talked to Greiner about the developing program of cooperation between Darmstadt and our group in the heavy ion field.

I then walked down to Building 70 with Ken Hulet and his son Randy (who is visiting the Lab today) and Ron Loughheed who is collaborating with Hulet on his experiment on the chemistry of element 104. We discussed further the progress on this.

I went by Building 70A to pick up Sven-Gosta Nilsson and, joined by P. J. Siemens, a visitor from the Bohr Institute in Copenhagen, we had lunch outside the cafeteria. Andree and Jean Gizon from Grenoble were also at the table with us. We discussed Siemens's work on the mechanism of nuclear reactions to produce superheavy elements.

After lunch, Ken Crowe came by to give me his rather positive views on the directorship of LBL. I also saw Dave Shirley to pass on Stan Thompson's hope that his graduate student Arthur Soinski will get started on the experiment to determine the fission product distribution of fermium-257 at low temperatures.

At 1:40 p.m., I went to the Nuclear Theory Seminar given by M. Nagarajan on "Recoil Effects in Heavy Ion Transfer Reactions." I didn't stay very long because it was highly mathematical.

Bill drove me home; this is the first day, since my return to Berkeley last fall, that I haven't needed to carry home my briefcase.

Friday, August 11, 1972 - Berkeley - San Francisco

Dave rode in to work with me. At 11:30 a.m., I drove with Jack Hollander to the Press Club at 555 Post Street in San Francisco to hear Commissioner William O. Doub speak. I sat at the head table with Doub, Charles Raudebauch (President-Elect of the Club and 25 years with the San Francisco Chronicle), Don Reardon (Assistant Manager of AEC San Francisco Operations Office), and Edwin McMillan. I sat next to Reardon.

Raudebauch presided and introduced Doub in the absence of Dick Alexander, President of the Press Club, who apparently was prevented from coming due to an emergency. Doub gave a talk on "Energy and the Environment: A California Perspective," followed by questions, which covered my concept that the AEC be transformed into a U.S. Energy Agency, the problem of separating the regulatory function from the AEC, the safety of nuclear power reactors, and the radioactive waste disposal problem.

I made arrangements with Doub to have him and his assistant, Martin J. Domagala, stop by our house for lunch on the way back from their visit to the Lawrence Livermore Lab tomorrow.

During the lunch, Bob Lowenstein, formerly with the AEC but who is now a General Counsel with the Nuclear Power Division of General Electric in San Jose, dropped by the table and we agreed to have lunch together, perhaps the week after next. Peter Giddings also stopped by and indicated that Nils Stähle will get in touch with me about having lunch together on Monday. Charles Petit, a reporter with the Chronicle, approached me and asked whether I didn't think that Doub had implied in his remarks that I was in favor of secrecy during my regime, which the new AEC administration had corrected, and I replied that I did not think that at all. He asked what I did think of the speech and I said it was a good one. (Charles Petit is the husband of Ernest Lawrence's daughter Barbara.)

Just after 3:00 p.m., I went to a farewell party in honor of Margaret (Meg) Brown, who has worked for the past year as secretary to the Energy and Environment Program. The party was held in the Building 70A Conference Room. She and her husband are moving to Happy Camp in Northern California, where he will teach in the local high school.

Emilio Segre came into my office and we debated the question of placing our property on Lomas Contadas in a trusteeship in order to avoid the delays of probate. We also discussed the problems of the Lab Directorship.

At 4:15 p.m., Art Rosenfeld dropped in to discuss the problems of Lab leadership. He said that he and most of the senior people in the Physics Division do not have a high opinion of the Bevatron and its program or its future role.

I worked in the yard after I got home, continuing to clear the ditch at the back. Jonathan Jasaitis, as Dianne's guest, spent the afternoon at our house and had dinner with the family.

Saturday, August 12, 1972 - Lafayette

I spent a large part of the morning giving Dianne a lesson in Swedish. We have five dogs with us this weekend--Suki, E. Coli (whom we are keeping during Steve's trip east with Lynne), Bessie (whom we are keeping while Bill is with us until he flies to Indiana to join Lynne), our Moses, and Manzanita (Moses's sister whom we are caring for this weekend).

Commissioner William O. Doub and his Staff Assistant Martin J. Domagala came by for lunch, arriving at 2:00 p.m. I showed them around the premises and Dianne joined us for part of the lunch. The conversation was fairly general, bringing me up-to-date on AEC matters, particularly in the regulatory field. I emphasized the importance that we are placing on research on energy and the environment, and Doub indicated that he will be out again in a month and would like to see Jack Hollander at that time. I also told him about the status of the SuperHILAC and the general funding problems there and mentioned the possibility of our working out a cooperative arrangement with the Germans and the heavy ion work at Darmstadt--which might even extend to some funding for the SuperHILAC by the Germans. I said that I am going to investigate this when I visit there on September 1. He seemed to think this was a good idea. I also described to him some of the administrative problems in the Laboratory.

After lunch, we rode with Doub's AEC driver to the LBL HILAC Building where we met Al Ghiorso. We gave Doub and Domagala a complete tour of the SuperHILAC and the attendant experimental facilities. In alluding to our funding difficulties, we mentioned the possibility of obtaining some funding from the Physics Branch of the Division of Research, and Doub asked Domagala to look into this.

Dave spent the day in San Francisco with his friend, Jean Cain, who spent the night with us. Lynne and Steve called from Twin Falls, Idaho where they are spending the night in the Sunset Motel. They drove to Mount Lassen the first day (Thursday), to Crater Lake the second day (yesterday), and 600 miles to Twin Falls today. They are feeling fine and the Bonneville is doing well. I worked on the Soviet chapter of Travels in the New World as time permitted during the day.

Sunday, August 13, 1972 - Lafayette

I worked a good part of the day on Travels. Dave and Jean left soon after breakfast and spent the day visiting Muir Woods and Stinson Beach.

At 5:00 p.m., Helen, Dianne, Bill, and I drove to Piedmont to visit the park and Jane Reimer (with whom we had a drink) to see her garden to get ideas for landscaping the area along the ditch between the row of redwood trees and the tennis court.

At 8:00 p.m., Nils Ståhle, President of the Nobel Foundation, called from the San Francisco home of his daughter, Mrs. Peter Giddings, to set a lunch date for tomorrow.

Monday, August 14, 1972 - Berkeley

Helen drove Dave and me to work.

I attended the meeting of the SuperHILAC planning group. Present were Ghiorso, Nitschke, Nurmia, the Eskolas, and the Alonsos. We just discussed in general the shakedown problems that are continuing.

I went down to the campus at 11:00 a.m. to hear a lecture by Dr. K. Mendelssohn (Clarendon Laboratory, Oxford) covering his trip to China. He showed a number of movies of people and historic spots that he visited in such cities as Canton, Peking, and Nanking. David also attended.

After the lecture, I had lunch at the Faculty Club with Nils Ståhle, retiring Executive Director and President of the Nobel Foundation in Stockholm. He told me that Stig Ramel is taking his place and Ulf von Euler has taken Arne Tiselius's place as Chairman of the Foundation. He told me about the Federation of International Institutes for Advanced Study (IFIAS) which will have its secretariat at Stockholm and for which he will serve as Chairman of the Board. I told him about my forthcoming visit to Stockholm and also about my feeler from August Schou at the Nobel Institute in Oslo about another Nobel Conference in September 1973 on the topic of applications of science and technology to developing countries; he hadn't heard about this. We discussed briefly the Piccioni suit against Segre and Chamberlain, and he indicated that he doesn't recall problems or dissenting letters associated with this at the time the Nobel Prize was awarded, but he did say he was not in a position to learn about such things.

After lunch, we went up to the HILAC Building where Al Ghiorso and I gave him a tour of the SuperHILAC and described the SuperHILAC and BEVALAC concept to him. Following this, I took him down to the campus where he met his two daughters who drove him back to San Francisco.

At 3:45 p.m., John Rasmussen came by, having just arrived from Yale after a 16-day trip across the country pulling a U-Haul trailer. He will be with us on a two-year sabbatical with the possibility of staying even longer.

I attended John Newton's seminar on "Compound Nuclear Reactions Between Heavy Ions and Light Nuclei." Bill then came by to pick me up and we went by the Chemical Biodynamics Lab to pick up Dave. Here we met Ed Bennett, the scientist Dave is working under on a brain research project (they use radioactive tritium to look for increased RNA and protein concentration in the brains of sacrificed mice that have been subjected to learning regimes).

The three of us then rode to San Francisco to attend Melvin Calvin's lecture on "The Origin of Life," which is part of a series of public lectures put on by the California Academy of Sciences in Exposition Theater of the Palace of Fine Arts. We had a quick bite to eat at the cafeteria in The Cannery at Fisherman's Wharf on the way to the lecture. Melvin made a brilliant, well received speech.

Thursday, August 15, 1972 - Berkeley

I rode in with Dave. I wrote to Karl and Jenny Adolfsson (my mother's brother and his wife) about my upcoming trip to Sweden (copy attached).

I called Melvin Calvin at 10:00 a.m. to ask if he had made a decision about going to the Soviet Union under the Znanie exchange. He said that he is working on this, especially with an eye to combining it with a trip to China. He said that I could give his name as a tentative acceptance, but we understand that this would have to be confirmed.

I then called John Mayor at AAAS in Washington and told him that I had received tentative acceptance from Calvin--that John could use his name, could call him, and that he would want to go in the spring. He told me that David Grant will go and that Alton Lang wants to but is uncertain of the dates. I advised that we shouldn't make anything out of the dates of these visits. He has not yet asked Frederick Doyle; he had learned that Doyle doesn't have a Ph.D. and thought he should investigate further. At Phil Abelson's suggestion, he checked with the American Geophysical Union; Henderson there praised him as a foremost figure in the field, which seems to compensate for the fact that he doesn't have an earned doctorate.

From 10:30 a.m. to noon, I attended the Nuclear Theory Seminar, where Walter Greiner spoke on "Spectra of Nuclei with Arbitrarily Shaped Collective Potentials."

I had lunch outside the cafeteria with Greiner, Muller, Newton, Glendenning, and Marcel Verneroni (summer visitor, nuclear theorist from Orsay).

I met John Harte who is working with Hollander on "Elements of a National Energy Policy," a draft for Senator John Tunney.

I dropped by to see Liljenzin and Kratz in their lab. They are now working on the use of a cation exchange resin (Davex-50) with bromide complex ions of platinum metals, mercury, etc. (as stand-ins for superheavy elements); these complex ions pass through the resin as a group separation. I then went up to see Ghiorso and the SuperHILAC crew. They are still trouble-shooting.

I rode home with Bill in the Volvo. I worked in the backyard digging out the ditch. Mr. Rudholm finished repairing the sprinkling system for the junipers around the tennis court.

Wednesday, August 16, 1972 - Berkeley

I rode to work with Dave. I wrote to W. B. McCool, Secretary of the AEC, on the occasion of his retirement to add my commendation for his many years of outstanding service.

From 9:45-11:00 a.m., I met with Mason Willrich, Professor of Law and Director of the Center for the Study of Science, Technology and Public Policy at the University of Virginia in Charlottesville. I

Berkeley  
xxxxx

August 15, 1972

Mr. and Mrs. Karl Adolfsson  
Kyrkvägen 4A  
S-71400 Kopparberg, Sweden

Dear Uncle Karl and Aunt Jenny:

I am coming to Sweden during the week beginning Sunday, September 10, to deliver what is called the Studsvik Lecture at the Studsvik Laboratory (about 100 kilometers south of Stockholm).

I would like to suggest a gathering of the relatives at Laxbrostugan at Skansen as we have done on my other visits, and would like to suggest the time of 2:30 p.m. on Sunday, September 10. I would hope that you and Jenny and others in the Adolfsson "Släkt" will be able to attend as in previous years. I have also written to Olof Bloom in Stockholm to ask that he invite the relatives in that area as he has done in the past.

My host in Stockholm will be Dr. Bo Aler, Managing Director of the Swedish Atomic Energy Commission (AB Atomenergi, 611 01 Nyköping 1; telephone 0155 - 800 00). I will be staying at the Grand Hotel in Stockholm.

I will leave California on about August 28. I will be visiting in Frankfurt, Germany, then attend a symposium in Moscow, and fly from there to Stockholm. Unfortunately, neither Helen nor any of the children will be able to come with me on this trip. Helen feels that she must stay home with Dianne in order to get her started in school next month, and the other children are all busy getting ready for school and in other ways.

I might be able to get up to Kopparberg on Tuesday afternoon and Wednesday; I am returning to the United States on Thursday, the 14th. Looking forward to seeing you soon,

With love,

GTS/ams

Wednesday, August 16, 1972 (con't)

learned that he went to Boalt Hall from 1957-1960 and obtained his law degree while I was Chancellor. The discussion was generally along the lines of our mutual interests in NPT and arms control. He told me about a book that he is in the process of final editing, tentatively entitled "International Safeguards and Nuclear Industry," to be published by John Hopkins Press in Baltimore, with chapters by Harry Smyth, Bernhard Bechhoefer, Willrich, Paul Szasz (formerly of the IAEA), Vic Gilinsky, Ted Taylor, and Larry Scheinman. He may send me an advance copy of this if its publication is much delayed. I gave him an autographed copy of Man and Atom which he said he has had trouble purchasing.

He reminded me of his recent book Global Politics of Nuclear Energy; he will send me a copy if I can't locate mine. He recommended that I visit with G. A. Arbatov--Head of the Institute of the U.S.A. in Moscow--and he will phone to me the name and address. Willrich visited the Soviet Union from August 5-20 last year and thus was there when I was.

Willrich is particularly concerned about the deteriorating attitude of U.S. industry towards safeguards. He feels that the national system of safeguards to prevent either enriched uranium-235 or plutonium from getting into the hands of gangsters can be more important from the standpoint of world security than an international system to prevent even a country like Israel from acquiring nuclear weapons. I agreed generally with his concern, but pointed out that the handling of plutonium is a very tricky and dangerous business, and so diversion and use by gangsters is perhaps not so imminent a problem as he fears.

We then got on to the discussion of the need for a better coordination in the development of energy in the United States, and he made reference to my editorial in Science. He generally agrees that the AEC should be the U.S. Energy Agency. I explained to him the concern of some that in this case the AEC should transfer its weapon function to the DOD; I explained to him that this would be a mistake because it would diminish civilian control of nuclear weapons, and he seemed to agree.

The discussion of energy led to my description of the program which we are getting underway in the Radiation Lab in collaboration with the campus in the general field of energy and the environment. I asked Jack Hollander to join us during the last 15 minutes of our discussion, and he and I described our program to Willrich. He was particularly interested in the involvement of social scientists and members at Boalt Hall, and we told him of the involvement of Ira "Mike" Heyman, Richard M. Buxbaum of Boalt Hall, and the involvement of Todd La Porte of Political Science and Kai Lee of the Institute of Governmental Studies.

This discussion brought out the interest of Willrich in spending a sabbatical year at a place where he might work on the legal aspects of energy and environment in collaboration with a strong technical group. It became clear that LBL might be just the place for him to do

this. His leave is planned for the 1973-74 academic year. I told him I was interested in the possibility of his spending the year with us also from the standpoint of his expertise on the NPT, SALT, and arms limitations questions because I was planning to do some writing in this area and his presence would obviously be helpful. I indicated that we could furnish him an office, but financial aid would be difficult. He indicated that he probably will be able to get NSF and other fellowship help to supplement his sabbatical salary. We will keep in touch on this subject.

At 11:30 a.m., I met with Andy Sessler. I strongly urged him to declare himself a candidate for the position of Director of the AEC Division of Research. I said that a man of his broad interests and capabilities could contribute a great deal to the health of scientific research in the United States in this position. I also told him about the problems I have been having with the Director's Office and in particular the problem with the allocation of the AIP funds this year. He seemed to agree that it was relatively more important for the Lab to go into heavy ion research than K-meson research.

I had lunch with Alvin Baum, Project Director of Overview, at Norman's Restaurant on the corner of College and Alcatraz. He described to me some of the background of Stewart Udall's Overview and how he came to be connected with it. I described to him the Huckleberry Trail area, the recent action of the EBRPD Board of Directors to acquire the central 50-acre area through the condemnation procedure, and the importance of acquiring the additional 150 acres in order to properly preserve the many unique and priceless botanical specimens. I also told him about the meeting I attended which had been called by Wally Costa to discuss the plans for a complete hiking and bicycle trail system in and around Lafayette.

I rode home with Bill and worked cutting weeds along our Thompson Road frontage before dinner.

Thursday, August 17, 1972 - Berkeley

Helen drove Dave and me to work. Bob Thorne called me at 9:20 a.m. I described to him the AIP funds meeting and the problem of the GPP funds as they concern the SuperHILAC. He told me that Bob Hollingsworth will be coming out in November and has asked Thorne to set up a meeting with President Hitch at that time.

Catherine Borrás, William Bevan's secretary, called me from AAAS in Washington. She read me a letter from Jose de Cubas of the Council of Americas accepting participation in the Mexico City meeting as described in my letter to him of July 30. She read the reply they have drafted for me, which I thought was very good.

I attended the meeting of the SHE Chemistry Group from 10:00-11:00 a.m. Present were Ghiorso, Nitschke, Nurmiä, Liljenzin, Kratz, and Hulet, joined toward the end by Greiner, Muller, Rasmussen, and Hans Krappe. We discussed in general the status of the preparations for chemical identification of element 104 and the superheavy elements. I told Greiner about a call from Helmut Ahrens this morning concerning the arrangements for my visit to GSI and the University of



Thursday, August 17, 1972 (con't)

Mainz. Greiner is hopeful that I will be able to support the possibility of his continuing to hold his professorship at Mainz and in addition serve as lead man in theoretical physics at GSI; von Friedenburg, the Minister for Culture in Wiesbaden in the State of Hesse--under which the University of Frankfurt operates and from which GSI gets 10% of its funds (the remainder coming from the German Federal Government)--is opposing such a dual arrangement.

I came back down to Building 70A with John Rasmussen and visited with him in his new office off of Room 4405. He indicated a willingness to participate in programs that I might be interested in, and I mentioned to him the program of relating the calculated electronic structures of the superheavy elements to their chemical properties; I said I would send him some reading material on this.

Jerry Rowland called from Irvine regarding the ACS Nuclear Division Award program for Al Ghiorso in Newport Beach during the week starting January 28, 1973. They have tentatively scheduled Al's paper for Tuesday the 30th and would like me to present the second major talk that evening. I said I probably could.

I had lunch with Walter Greiner in the cafeteria. We discussed my interest in having work go on here at the Lab on the calculation of the electronic structures of the superheavy elements and their relation to their chemical properties. He said that he has a graduate student, Gerd Soff, who is finishing his work in about a year, and he would be happy to send him to Berkeley at that time to work with me on this; he said that he is as good as Fricke. We also discussed my forthcoming talks with Schmelzer and others during my visit to GSI concerning the collaborative arrangement between GSI and Berkeley. He said that he has suggested to Schmelzer something of the order of \$300,000-\$400,000 as the level of financial support. He indicated that it might be worth my while after talking with Schmelzer to try to go to Bonn to talk to German Federal officials about the arrangements.

At 1:45 p.m., Norman Edelstein dropped in to discuss the status of their program and arrangements for its continuation during his sabbatical which begins week after next. He said Professor Neil Bartlett wants to get started on a program to identify higher oxidation states of the actinides. He has a graduate student, Kevin Leary, who will work on this in one of Edelstein's rooms and possibly also a good postdoc who is coming next month. They will need a new fluorine line, costing about \$2,000, in which they will produce  $\text{XeF}_6$ ; the actinides such as neptunium, plutonium, and americium will be dissolved in the  $\text{XeF}_6$  in the attempt to oxidize them to the VII state. Edelstein said that Streitwieser has a student, David Starks, working with him in one of his rooms and they are trying to prepare cyclooctatetraene Pa (IV). He also said that Professor Raymond hopes to have a postdoc supported by NSF working in one of Edelstein's rooms on the synthesis and measurement of the properties of actinide cyclopentadienes. Edelstein hopes to replace his postdoc Bill Kolbe when his term expires in about a year. Tom Parsons and Kolbe will play a key role in trying to coordinate all of Edelstein's work, with my help, during Edelstein's absence.

Zelma Gelling called me from the Chancellor's Office as a follow-up to my conversation with Errol Mauchlan about xeroxing my pink memos there, which she said she would go to work on as much as possible. For criteria, I suggested all pink memos plus everything that is related to my life in Washington, or anything that is career oriented. We agreed on the arrangement that she will pull some of these materials over a period of time and get in touch with Sheila who will xerox them up here.

Helen drove Dave and me home. I met Ann Orme, with whom Dave is working, when I picked him up. I worked cutting weeds behind our ditch before dinner.

Friday, August 18, 1972 - Berkeley

Helen drove me to work. Dave is not working today; he is hunting for a place to stay during the school year in Berkeley.

Andy Sessler came in and told me he has phoned Spof English to say he is willing to become a candidate for the position of AEC Director of Research for a three-year term. I dropped by to see Liljenzin and Kratz in their lab. Kratz is distilling ruthenium tetroxide as a carrier for element 108. I also dropped in on Perlman in his lab in Building 70. He told me he has just been elected to the Danish Royal Academy of Sciences.

The Program Committee of the Nuclear Chemistry Division held its regular bag lunch meeting in my office from 12:00-1:00 p.m. Present were Cerny, Diamond, Edelstein, Ghiorso, Glendenning, Hollander, Hyde, Perlman, Poskanzer, Shirley, Street, Templeton, and Thompson (Bernie Harvey was absent). I opened the meeting by announcing Iz Perlman's election. I also informed them that Andy Sessler has agreed to become a formal candidate for the position of Director of the AEC Division of Research. A discussion of the other candidates for this position led to a discussion of the National Academy of Sciences physics survey report, chaired by Allan Bromley. We agreed that we ought to get the entire report on the hill and that the Division should particularly have the section on heavy ions. We discussed the potentially grave consequences of their reference, in reviewing the practical applications of superheavy elements, to their use in making bombs. Both Hyde and Ghiorso stated that this is patent nonsense; indeed, Al showed by some calculations that it is impossible. We discussed whether or not we should prepare a disclaimer, but the matter was dropped for the time being.

Dick Diamond reviewed the status of the equipment budget. This led to a general discussion of the budget and Ken Street provided some comparative statistics. I suggested that Street and Hyde establish guidelines for avoiding a \$400,000 overdraft this year. Hyde and Diamond will talk with Fred Goulding to discuss Street's recommendation that the electric support be reduced to 35.5 man years. Hyde asked for someone who would serve as protem head of the division while he and I are out of town--a period of three days. I described to the committee the AIP funds meeting, some of the activity since that time, and we generally discussed some of the problems connected with this.

We had a buffet dinner at our house for a number of our foreign participants and visitors to the Nuclear Chemistry Division of LBL. The group consisted of Walter and Barbara Greiner and their boys Carson and Martin (about 7 and 9 years old); Sven-Gosta and Ingrid Nilsson and their boys Bengt and David (17 and 9 years old); Jens and Karin Kratz and their son Anka (6 years old) and young baby; and Jol and Birgitta Liljenzin and their daughter Eva Lotta (about 7), son Olle (about 5), and baby. The kids played croquet on the front lawn before dinner. After dinner, Dianne, her friend Julie, and David entertained with a pantomime show.

Saturday, August 19, 1972 - Lafayette

Lynne called from Adair, Iowa. She said they have visited Yellowstone National Park, Grand Teton National Park, Fort Collins, Colorado, Rocky Mountain National Park, and they spent last night at Louisville State Recreation area at Louisville, Nebraska (this was a noisy place near a railroad track). They have had no car trouble, but did have the front shock absorbers replaced, load levelers placed in back, and the differential repacked with grease (total cost \$115) at Jackson Hole, Wyoming. They will drive onto Moline, Illinois today and then go to Lafayette, Indiana tomorrow.

I spent much of the day cutting weeds on the back bank of our property. I also worked on Travels in the New World. We received a letter from Eric saying that he is staying with his friend Brian Sawyer in Vermont, having completed his stay with the Student Conservation Program, and will go to Washington tomorrow to visit Pete and Jane.

Sunday, August 20, 1972 - Lafayette

I spent most of the day working in the yard, painting various items, etc. and worked on Travels.

Leo Brewer called and asked whether I would be willing to run against Fred Blumberg this fall as the Lafayette representative on the East Bay Regional Park District Board; I said I could not due to time pressures, but suggested that Bill McKee might be a good candidate.

Monday, August 21, 1972 - Lafayette

I rode in to work with Dave.

I met with the SuperHILAC planning group from 9:00-10:00 a.m. Present were Ghiorso, Nurmia, Nitschke, the Eskolas, and the Alonsos. We discussed the general problems that plague the SuperHILAC and SASSY. Ghiorso has sent out the mass separator part of SASSY to be chromium-plated to help overcome electrical discharge problems. Pirkko reported that she has, as a result of analyzing her data, observed the alpha decay branch of Es<sup>244</sup>.

Bob Leyland called me in my capacity as a member of the EBRPD Citizens Task Force. He is involved in a group which is trying to stop land subdivisions in and about the wilderness area of Sunol Regional Park and wants me to support their efforts. I asked him to

Monday, August 21, 1972 (con't)

bring all of the information to me in writing; he will come in to see me tomorrow.

I walked down to the SAN Office on Bancroft Way and picked up Bob Thorne and Don Reardon in Thorne's office; we continued on to the Californian Restaurant in the Great Western Building on Shattuck Avenue for lunch. (They told me that they have an approval from the AEC, and the money, and are negotiating with GSA to move from their present space on Bancroft to occupy four floors of the Great Western Building.)

Thorne told me that he has spoken to Vice President Perkins, who apparently is undertaking to have the Townes Committee instructed to review the performance of the LBL Director. He told Perkins that Bob Hollingsworth will be out here on November 29 and 30 and that action should be well underway by that time, as this is expected by Hollingsworth. He indicated that Schlesinger was also now aware of the problem as the result of a briefing by Doub, which included a summary of the breakdown of the AIP funds allocation. He said that Schlesinger is going to be speaking at the Commonwealth Club luncheon on September 22 and will visit the Lawrence Livermore Lab in connection with an open house on Thursday, September 21. Thorne didn't know whether Schlesinger will visit LBL.

Thorne said that he will make a strong recommendation to headquarters to disapprove the allocation of AIP funds which presumably will be recommended by the Director's Office; he is perplexed that this request hasn't come forward yet. When I indicated that Pappas had told us that the recommendations on the AIP had to be in to the Division of Research by August 8, Thorne said that this was nonsense. He also hasn't heard anything about a meeting on the allocation of GPP funds, and he said that he had expected that he would have received something by now. He revealed that he is probably going to ask for a series of briefings on such matters in order to overcome the Lab administration's refusal to keep him informed.

I told Thorne and Reardon about my forthcoming trip to Darmstadt to confer with Schmelzer and others on the basis of preliminary discussions with Walter Greiner about a cooperative program between our heavy ion research groups. I said that this might involve funding of our work to the extent of \$3-400,000 by the Germans and asked if this would lead to any problems. Thorne thought this could be handled all right, providing we didn't give away any basic or patent rights. We agreed that he would do nothing about this at the present time but that I would keep him informed.

I told him about Andy Sessler's agreeing to have his name submitted as a candidate to be Director of the AEC Division of Research and that I understand the two other leading candidates are Carl York of UCLA and Louis Rosen of Los Alamos. I also told them about the Allan Bromley report of the National Academy of Sciences and the relatively high priority given to heavy ions and the very low priority given to the Bevatron. I recounted as well the unfortunate reference in the report to possible practical and defense applications

of superheavy elements, which could lead to problems on the Berkeley campus.

Thorne told me that there is a persistent rumor in Washington that if President Nixon is re-elected, Schlesinger will serve as Secretary of Defense during his second term and William Doub will become Chairman of the AEC.

In the afternoon, John Rasmussen dropped in to discuss further his interest in working in the field of calculations of electronic structures of superheavy elements; he has read a number of my reprints in this field.

I called Roger Batzel at Livermore at 4:00 p.m. to alert him to the problems concerning the Directorship of LBL.

Lynne called from Lafayette, Indiana. She has found a second-story apartment in West Lafayette, about a mile and a half (across the Wabash River) from the campus, which seems to be ideally suited to the needs of her and Bill. She and Steve stayed temporarily in an apartment of Stephanie Seaborg (no relation). They will drive to Moline to pick up some more furniture at Bill's mother's house.

I worked on our back yard ditch before dinner. I have enlisted the help of Gary (Pancho) Hutchison, a cousin of Catherine Sherman, to help clear the weeds, etc. on the back bank and ditch; he is staying at the Shermans while they are vacationing in Pennsylvania and Ohio.

Tuesday, August 22, 1972 - Berkeley

Helen drove Dave and me to work, then drive to Yosemite (with Suki) to pick up Tyrie Jenkins at the end of her stint with the Student Conservation Association.

I conferred with Karl Cohn about my speech as keynoter on December 12 on "Energy Conservation I: Nuclear," to be given at a symposium of the Power Engineering Society of IEEE in Washington.

I talked to P. J. Siemens who said that, as a result of our luncheon, he and Nagaparian are working on the calculation of yields of direct nuclear reactions to make superheavy elements.

At 10:30 a.m., I went to a seminar to hear Sven-Gosta Nilsson speak on "Nuclear Shells at Large Deformations Based on Vague Theories and Selective Data." He described recent experiments that observed gamma ray transitions to the secondary minimum in plutonium-240. After, I met Paul Kienle, an experimental nuclear physicist at the Technical University of Munich, who is spending a one-year sabbatical leave with us to work with Diamond and Stephens on heavy ion coulomb excitation experiments.

At 1:30 p.m., Siegfried Tagesen, who is visiting us from Berta Karlik's laboratory (The Radium Institute) in Vienna, dropped in with Stretch Conzett. He passed on to me cordial greetings from Berta, and I asked him to return my fond greetings to her. He is working at the Radium Institute on the interaction of 14-Mev neutrons with deuter-

Tuesday, August 22, 1972 (con't)

ium. He is on his way to attend a meeting on "Few Particle Interactions" in Los Angeles sponsored by AEC, NSF, and IUPAC.

I had lunch with Dave outside the cafeteria.

I talked to Bob Silva at Oak Ridge by phone at 1:45 p.m. We agreed that he would invite Phil Horwitz and one or two of Darleane Hoffman's people at Los Alamos to come to work at the Lab for a week or two beginning the first week in October. He said he is starting work with Zvara on gas phase chemistry of element 105, using  $105^{260}$  produced by  $Cf^{249} + N^{15}$ . Zvara told him that the separation of the superheavy element fraction from the actinide element fraction at Dubna was done by the precipitation of the former as sulphides with  $H_2S$  in acid solution. Their experiment to try to produce element 104 which gave negative results used  $Sn^{122}$  as a target and  $Xe^{136}$  projectiles, hoping to produce  $104^{256}$  and identify it through the spontaneous fission decay of its alpha decay product  $102^{252}$ . Their experiments are severely limited by the small beam of xenon ions which is  $10^{10}$  particles per second maximum and usually substantially less.

Tom Elioff dropped in to see me at 2:15 p.m. He was quite disturbed about the meeting on AIP funds and hoped that some arrangements could be made, perhaps through headquarters/AEC, to make categories that would prevent a repetition of such a show. I indicated that I was also thinking about these possibilities and that repercussions from the August 4 action might force the Lab's hand on such matters in any case. He alluded to the problem that we have with the Lab Director and the strong need for some kind of long-range planning in the Lab.

Nick Hetzer dropped in to brief me on the International Ecosystems University (at the request of Nils Stähle). Dr. Hetzer is President of the University, and they hope to start with a faculty and students in January 1974 at a site yet to be chosen. Such places as Vienna and Venice are under consideration and may offer them buildings. The IEU will have a 15-member Board of Governors to set policy which will meet about once a year, a full-time Board of Directors consisting of five people, and a Secretariat. There will also be parallel to these governing bodies a Board of Advisors consisting of a much larger number of people that might meet only once every 2-4 years.

Bob Leyland, Helen Burke (Chairman, Conservation Committee, Bay Area Chapter, Sierra Club), and Dale Westbrook (member of the committee) came in to tell me about a problem they have concerning Sunol Regional Park which is planned as a wilderness area. A housing development by Charles Moore, described on Tentative Parcel Map 849, consisting of 261 acres divided into twelve 20-acre lots, has been approved by the Alameda County Planning Commission. The site adjoins Sunol and would have an extremely negative effect on the wilderness aspect of this park. The decision has been appealed to the Alameda County Board of Supervisors and will be heard at their meeting on September 7. The EBRPD Board of Directors has recommended that the Charles Moore application be disapproved. Unfortunately, there is

already under way another housing development, described in Tentative Parcel Map 644, consisting of 280 acres that is fourteen 20-acre parcels, but it is probably too late to do anything about this. They wanted me to help prevent the additional Charles Moore housing development. They reminded me of the Skyline National Urban Park plan which would tie together all of the regional parks in the EBRPD. They informed me that the Bay Chapter of the Sierra Club meets at 7:30 p.m. every third Tuesday at the Rotary Natural Science Center on Lake Merritt, corner of Bellevue and Perkins. They gave me a supply of material concerning the Sunol/Moore application problem.

I did a little work in the back yard before dinner. Pancho did some clearing of weeds behind the ditch and Mr. Rudholm trimmed the hedge along the driveway. I also watched on TV the Republican National Convention in Miami; President Nixon was renominated by a vote of 1347-1 (Pete McCloskey received the one vote).

Sheila dropped by and played some tennis with Bill. Helen returned from Yosemite with Tyrie at 7:00 p.m. We all had a Colonel Sanders chicken dinner. Mr. and Mrs. Frank Silva, Julie's grandparents and our neighbors, came by after dinner and Dianne, Julie, and Dave put on a pantomime show for the whole crowd.

Wednesday, August 23, 1972 - Berkeley

Helen drove us to work. Later, she took Tyrie to Berkeley to see the University campus and the Lawrence Hall of Science.

Joyce Burr dropped in at 11:15 a.m. with drafts of letters to members of CUWA and the Citizens Task Force of the EBRPD, which I would send to both groups, describing the need to acquire the additional 150 acres for the Huckleberry Trail Botanic Preserve. She told me that Mary Jefferds is going to run against Paul Harberts for the EBRPD Board of Directors in the November election.

I had lunch with Ed Bennett, President of the Bay Chapter of the Sierra Club, to discuss general conservation measures. I told him about my various activities in this field. He described to me a pending initiative action on the November ballot to create the Coastal Zone Conservation Act, which would establish a State Coastal Zone Conservation Commission and other measures to declare a moratorium on any industrial uses of coastal areas not so used at present for the period 1973-76 in order that an overall plan could be made for the future use of this land. He gave me copies of the Initiative Act (attached to 200 Bennett). I expressed the hope that the initiative would be consistent with the eventual planned use of some areas of the coast for nuclear power plants.

Helen drove us home. Dianne's friend Cherie Alexander spent the afternoon with her and had dinner with us. I put up some tool-holding boards in the workshop before dinner. Dave rented a room at the Robert Budnitz home today, where he will stay starting October 1.

Thursday, August 24, 1972 - Berkeley

Helen drove Tyrie to the San Francisco Airport where she caught

an 8:15 a.m. plane to Arizona. She is going to spend some time there with her aunt and uncle before returning to her home in Wilmington, Delaware. She is thinking about starting school at UC Berkeley a year from now. Bill drove Dave and me to work on his way to Hayward.

At 10:00 a.m., I met with the SHE Chemistry Group--Ghiorso, Hulet, Nitschke, Harris, Liljenzin, and Kratz. We discussed the recent ion exchange experiments of Liljenzin and Kratz and their applicability to the automated apparatus of Nitschke.

At 10:30 a.m., the meeting expanded to the regular meeting of the SuperHILAC Research Group. This began with a presentation of HILAC Hilites by Nurmia. After a status report on the SuperHILAC, Nilsson gave a talk on "Present Status of Superheavy Element Calculation."

I had lunch outside the cafeteria with John Rasmussen and Walter Greiner. We discussed the calculations on the formation of quasi-molecular (double) heavy nuclei in heavy ion reactions, an area that Rasmussen is getting very interested in.

At 1:30 p.m., Luther Nichols, West Coast Editor of Doubleday and Company, dropped in to look at the draft manuscript of Travels in the New World to see if they might have any interest in publishing it. We had a nearly complete copy and a number of relevant photographs for him to see, and he spent over an hour on it. He then told me that he found it very interesting and regarded it as a valuable work but that it would require a good deal of editing to make it attractive to the lay reader. They do have editors who might do this, possibly including himself. I gave him a number of chapters as samples for his editors to look at. This will take a few weeks, and then he will get in touch with me about their decision.

Emilio Segre came in to talk about setting up a trusteeship for our jointly owned Orinda property. We agreed that he and I would be the trustees, that Helen would be first alternate for me and Adrian Kragen for him, and my sister Jeanette would probably be the second alternate to both if needed. We will discuss this further with Kragen who will draw up the necessary legal papers. During Emilio's visit, I signed my declaration for the suit of Oreste Piccioni vs. Segre and Chamberlain which is before the Superior Court of the State of California for the County of Alameda (copy attached).

Helen picked Steve up at the San Francisco Airport upon his return from Indiana. She also drove me home from work. Dave went home earlier to meet his friend and former Davis roommate Dave Crawford, who visited with him at our home. Lynne called to report on her progress in registering Bill and herself at Purdue. Her advisor is Dr. Donald R. Ottinger--a very fine person, she says. This is Bill's last night with us.

Friday, August 25, 1972 - Berkeley

Helen drove Bill and Bessie to Cal State Hayward for his last final exam and then to the Oakland Airport where they caught a plane to Lafayette, Indiana. Steve drove Dave and me to work.



1 STEINHART, GOLDBERG, FEIGENBAUM & LADAR  
 2 MICHAEL R. MARRON  
 3 One Post Street  
 4 San Francisco, California 94104  
 5 Telephone: 982-0116

6 Attorneys for Defendants  
 7 Emilio Segre and Owen Chamberlain

8 SUPERIOR COURT OF THE STATE OF CALIFORNIA  
 9 FOR THE COUNTY OF ALAMEDA

10 ORESTE PICCIONI, )  
 11 )  
 12 Plaintiff, ) NO. 425000  
 13 vs. )  
 14 EMILIO SEGRÉ and OWEN ) DECLARATION OF GLENN THEODORE SEABORG  
 15 CHAMBERLAIN, )  
 16 Defendants. )

17 I, GLENN T. SEABORG, declare as follows:

18 The facts stated in this declaration are within my personal  
 19 knowledge and if sworn as a witness, I can testify competently  
 20 thereto.

21 I am a nuclear chemist and hold the following degrees:  
 22 A.B., University of California, Los Angeles (1934); Ph.D, University  
 23 of California, Berkeley (1937); and over 40 honorary degrees. I  
 24 was awarded the Nobel Prize for Chemistry in 1951. I am now  
 25 employed by the University of California as University Professor of  
 26 Chemistry. I served from 1954 to 1961 as Associate Director of  
 27 the Lawrence Berkeley Laboratory, and from 1958 to 1961 as  
 28 Chancellor of the Berkeley campus of the University of California.  
 29 From 1961 to 1971, I served as Chairman of the United States Atomic  
 30 Energy Commission, which supports the Lawrence Berkeley Laboratory.

31 I have know Professor Emilio Segre since 1938, when I  
 32 began my first collaborative research with him in the Lawrence

1 Berkeley Laboratory (at that time called the Radiation Laboratory),  
2 and worked with him on numerous collaborative reserach efforts  
3 during the period 1938-42, including the discovery of, and demon-  
4 stration of, the slow neutron fissionable properties of the isotope  
5 plutonium-239. I have known Owen Chamberlain since 1942 when he  
6 began his work with Segre on war-related problems.

7 I have read the allegations of the complaint filed by  
8 Oreste Piccioni in the action entitled Oreste Piccioni v. Emilio  
9 Segre and Owen Chamberlain, No. 425000 in the Superior Court of  
10 the County of Alameda, State of California, and in particular the  
11 plaintiff's claims in paragraph 8 therein.

12 Based upon my experience and observations over thirty-  
13 eight years, it is my opinion that no reasonable physicist would  
14 reasonably have believed during any of the times mentioned in the  
15 said complaint, that any physicist, including, but not limited to,  
16 Emilio Segre and Owen Chamberlain, other than the Director of said  
17 Laboratory, or perhaps the Director of Physics, would have the power  
18 and ability to deny access to or permission to use the facilities  
19 of the said Laboratory. This conclusion is based, in addition, on  
20 my firsthand experience with, and understanding of, the adminis-  
21 tration of said Laboratory during the period identified in the  
22 said complaint, that is, 1954 to the present.

23 I declare under penalty of perjury that the foregoing is  
24 true and correct.

25 Executed this 24<sup>th</sup> day of August, 1972, at

26 Berkeley, California.

27  
28   
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
61  
62  
63  
64  
65  
66  
67  
68  
69  
70  
71  
72  
73  
74  
75  
76  
77  
78  
79  
80  
81  
82  
83  
84  
85  
86  
87  
88  
89  
90  
91  
92  
93  
94  
95  
96  
97  
98  
99  
100  
101  
102  
103  
104  
105  
106  
107  
108  
109  
110  
111  
112  
113  
114  
115  
116  
117  
118  
119  
120  
121  
122  
123  
124  
125  
126  
127  
128  
129  
130  
131  
132  
133  
134  
135  
136  
137  
138  
139  
140  
141  
142  
143  
144  
145  
146  
147  
148  
149  
150  
151  
152  
153  
154  
155  
156  
157  
158  
159  
160  
161  
162  
163  
164  
165  
166  
167  
168  
169  
170  
171  
172  
173  
174  
175  
176  
177  
178  
179  
180  
181  
182  
183  
184  
185  
186  
187  
188  
189  
190  
191  
192  
193  
194  
195  
196  
197  
198  
199  
200  
201  
202  
203  
204  
205  
206  
207  
208  
209  
210  
211  
212  
213  
214  
215  
216  
217  
218  
219  
220  
221  
222  
223  
224  
225  
226  
227  
228  
229  
230  
231  
232  
233  
234  
235  
236  
237  
238  
239  
240  
241  
242  
243  
244  
245  
246  
247  
248  
249  
250  
251  
252  
253  
254  
255  
256  
257  
258  
259  
260  
261  
262  
263  
264  
265  
266  
267  
268  
269  
270  
271  
272  
273  
274  
275  
276  
277  
278  
279  
280  
281  
282  
283  
284  
285  
286  
287  
288  
289  
290  
291  
292  
293  
294  
295  
296  
297  
298  
299  
300  
301  
302  
303  
304  
305  
306  
307  
308  
309  
310  
311  
312  
313  
314  
315  
316  
317  
318  
319  
320  
321  
322  
323  
324  
325  
326  
327  
328  
329  
330  
331  
332  
333  
334  
335  
336  
337  
338  
339  
340  
341  
342  
343  
344  
345  
346  
347  
348  
349  
350  
351  
352  
353  
354  
355  
356  
357  
358  
359  
360  
361  
362  
363  
364  
365  
366  
367  
368  
369  
370  
371  
372  
373  
374  
375  
376  
377  
378  
379  
380  
381  
382  
383  
384  
385  
386  
387  
388  
389  
390  
391  
392  
393  
394  
395  
396  
397  
398  
399  
400  
401  
402  
403  
404  
405  
406  
407  
408  
409  
410  
411  
412  
413  
414  
415  
416  
417  
418  
419  
420  
421  
422  
423  
424  
425  
426  
427  
428  
429  
430  
431  
432  
433  
434  
435  
436  
437  
438  
439  
440  
441  
442  
443  
444  
445  
446  
447  
448  
449  
450  
451  
452  
453  
454  
455  
456  
457  
458  
459  
460  
461  
462  
463  
464  
465  
466  
467  
468  
469  
470  
471  
472  
473  
474  
475  
476  
477  
478  
479  
480  
481  
482  
483  
484  
485  
486  
487  
488  
489  
490  
491  
492  
493  
494  
495  
496  
497  
498  
499  
500  
501  
502  
503  
504  
505  
506  
507  
508  
509  
510  
511  
512  
513  
514  
515  
516  
517  
518  
519  
520  
521  
522  
523  
524  
525  
526  
527  
528  
529  
530  
531  
532  
533  
534  
535  
536  
537  
538  
539  
540  
541  
542  
543  
544  
545  
546  
547  
548  
549  
550  
551  
552  
553  
554  
555  
556  
557  
558  
559  
560  
561  
562  
563  
564  
565  
566  
567  
568  
569  
570  
571  
572  
573  
574  
575  
576  
577  
578  
579  
580  
581  
582  
583  
584  
585  
586  
587  
588  
589  
590  
591  
592  
593  
594  
595  
596  
597  
598  
599  
600  
601  
602  
603  
604  
605  
606  
607  
608  
609  
610  
611  
612  
613  
614  
615  
616  
617  
618  
619  
620  
621  
622  
623  
624  
625  
626  
627  
628  
629  
630  
631  
632  
633  
634  
635  
636  
637  
638  
639  
640  
641  
642  
643  
644  
645  
646  
647  
648  
649  
650  
651  
652  
653  
654  
655  
656  
657  
658  
659  
660  
661  
662  
663  
664  
665  
666  
667  
668  
669  
670  
671  
672  
673  
674  
675  
676  
677  
678  
679  
680  
681  
682  
683  
684  
685  
686  
687  
688  
689  
690  
691  
692  
693  
694  
695  
696  
697  
698  
699  
700  
701  
702  
703  
704  
705  
706  
707  
708  
709  
710  
711  
712  
713  
714  
715  
716  
717  
718  
719  
720  
721  
722  
723  
724  
725  
726  
727  
728  
729  
730  
731  
732  
733  
734  
735  
736  
737  
738  
739  
740  
741  
742  
743  
744  
745  
746  
747  
748  
749  
750  
751  
752  
753  
754  
755  
756  
757  
758  
759  
760  
761  
762  
763  
764  
765  
766  
767  
768  
769  
770  
771  
772  
773  
774  
775  
776  
777  
778  
779  
780  
781  
782  
783  
784  
785  
786  
787  
788  
789  
790  
791  
792  
793  
794  
795  
796  
797  
798  
799  
800  
801  
802  
803  
804  
805  
806  
807  
808  
809  
810  
811  
812  
813  
814  
815  
816  
817  
818  
819  
820  
821  
822  
823  
824  
825  
826  
827  
828  
829  
830  
831  
832  
833  
834  
835  
836  
837  
838  
839  
840  
841  
842  
843  
844  
845  
846  
847  
848  
849  
850  
851  
852  
853  
854  
855  
856  
857  
858  
859  
860  
861  
862  
863  
864  
865  
866  
867  
868  
869  
870  
871  
872  
873  
874  
875  
876  
877  
878  
879  
880  
881  
882  
883  
884  
885  
886  
887  
888  
889  
890  
891  
892  
893  
894  
895  
896  
897  
898  
899  
900  
901  
902  
903  
904  
905  
906  
907  
908  
909  
910  
911  
912  
913  
914  
915  
916  
917  
918  
919  
920  
921  
922  
923  
924  
925  
926  
927  
928  
929  
930  
931  
932  
933  
934  
935  
936  
937  
938  
939  
940  
941  
942  
943  
944  
945  
946  
947  
948  
949  
950  
951  
952  
953  
954  
955  
956  
957  
958  
959  
960  
961  
962  
963  
964  
965  
966  
967  
968  
969  
970  
971  
972  
973  
974  
975  
976  
977  
978  
979  
980  
981  
982  
983  
984  
985  
986  
987  
988  
989  
990  
991  
992  
993  
994  
995  
996  
997  
998  
999  
1000

GLENN THEODORE SEABORG

Friday, August 25, 1972 (con't)

I got a cholera shot for protection during my visit to the Soviet Union at the Medical Services Building under the supervision of Dr. Tom Budinger.

Bill Wenzel (Associate Director, LBL, head of Physics) dropped in at 9:00 a.m. to discuss the tumultuous meeting of August 4 which he missed. He indicated that he thought the format should be changed so that the decisions for the various categories of the AIP could be made in Washington. The discussion then ranged into the future of the Lab, and I explained that I thought a long-range plan should be evolved and that Physics is especially lacking in this regard. As an example, I gave him the Oak Ridge Review, indicating the Alvin Weinberg is in the process of having long-range plans made for his Lab. The discussion also ranged over the history of the choosing of the site for the 200 Bev accelerator and various theories as to why the Sierra site sponsored by Berkeley was not chosen.

I walked down to the campus and met Emilio Segre and Adrian Kragen in the latter's office in Boalt Hall at 10:00 a.m. We decided that Kragen will set up the trusteeship for our Orinda land. Segre and I will be trustees with the right for either one of us to withdraw while we are both alive and with a clause making it irrevocable in the event of the death of either of us. Helen will be my co-trustee to take my place in the event of my death and Kragen will be Segre's. Kragen will try to set up the trust in such a way that we will continue to pay taxes on the land as we have in the past--that is, independent of the trust.

This morning the Chronicle carried an article announcing Iz Perlman's leaving Berkeley for permanent residence in Israel, where he will direct a new project in nuclear archaeology at Hebrew University, starting in April 1973 (copy attached).

I had lunch outside the cafeteria with a group including Kratz, Liljenzin, Poskanzer, and Edelstein.

James Davy, the Mayor of Lafayette, called me at 1:30 p.m. to ask if I would consider being the Member-at-Large on the Local Agency Formation Commission (LAFCO) for Contra Costa County. Established by state law, the five-member commission is made up of two county supervisors, two representatives of city governments, and one member-at-large. The commission has veto authority on the formation or changes in the jurisdictional boundaries of all of the public organizations in the county, such as cities, park districts, etc. He described some of its current activities and internal arrangements. I said I would have to think this over.

At 3:30 p.m., I attended a farewell party in the HILAC conference room for Kari and Pirkko Eskola. Nurmia spoke, describing the origin of the relationship of the HILAC group and scientists from Finland and the history of the Eskolas' participation in this collaboration. I then spoke, describing my first meeting with the Eskolas, my watching over their work from afar while I was in Washington, and my visit to the University of Helsinki where I saw their home laboratory. I

SF Chron 9/25/72  
 UC Scientist

## Perlman to Go to Israel

Dr. Isadore Perlman, one of the University of California's most noted scientists, will leave Berkeley for permanent residence in Israel next April, it was announced yesterday.

Dr. Perlman has accepted a \$100,000 grant from Hebrew University in Jerusalem to pursue the new techniques he helped pioneer in the relatively new science of nuclear archeology.

He resigned last January as associate director of the Lawrence Berkeley Laboratory to return to teaching and research after 11 years as director of the laboratory's chemistry division.

### SUCCESSOR

He was succeeded at the time by Dr. Glenn T. Seaborg, former chairman of the Atomic Energy Commission, with whom Perlman had been associated in developing the atomic bomb.

Perlman has been one of the pioneers in applying nuclear techniques to the science of archeology.

Until these new ways were developed, finding the age and origin of archeological specimens was difficult, time-consuming and costly.

But with the help of atomic energy, two new methods have been developed.

### POTTERY

In the first technique, a small sample is placed in a reactor and activated with neutrons. Pottery, for example, is made from clay and is similar in composition all over the world. But each piece also contains tiny amounts of rare earth elements.

When these are made radioactive, the scientist can determine the quantity of each in the sample, then determine the sample's origin by matching it with the geographic area that contains the same amounts of these rare earths.

The second technique is called X-ray fluorescence spectroscopy. It is a technique for making more refined measurements of the amounts of various elements in a sample than was possible, before.

This is done by taking a tiny quantity of a radioactive substance and putting it next to the sample.

The radioactive substance causes the atoms in the

sample to emit X-rays—each element emitting a ray of a different length. A very sensitive X-ray detector then measures the wave-lengths and quickly tells the scientists how much of which elements are in the sample.

Perlman, 57, has been involved in a variety of scientific endeavors, especially the various peaceful uses of atomic energy to the fields of medicine, chemistry—and now, archeology.

Sta  
ex  
G  
e

praised them for their outstanding work in their participation in the discovery of elements 104 and 105. Ghiorso then added his words of praise and presided over the opening of a number of presents for the Eskolas. Pam Taylor cut the cake and we had refreshments.

During the party, I talked to John Rasmussen and explored with him whether he might have any interest in accepting a permanent position back with the Department of Chemistry at Berkeley, and he replied that he would. (I had in mind the possibility of his filling Iz Perlman's slot.)

Helen drove me home. Dave stayed in to work and have dinner in Berkeley and came home later.

Saturday, August 26, 1972 - Lafayette - Livermore

I worked in the yard most of the day. Helen drove Steve to Davis, along with many of his belongings. We phoned Pete and Jane in Washington. Eric arrived there last Sunday, went to an all-night party, then left on Monday for a long backpack trip in Shenandoah Park with Scott Luria. Pete and Jane are fine but still not admitted to any schools yet.

Bob Jansen, up from Anaheim for a few days, called to say hello. He will have dinner with us Monday night.

At 5:30 p.m., Helen and I drove to the Holiday Inn in Livermore. Here we joined the Citizens Task Force touring group, which went by bus to Del Valle Regional Park. We disembarked at the boat ramp on the eastern side of Lake Del Valle and went by boat (which had to be towed by a little motor boat because its own motor wasn't working) to the Venados picnic area. Here we had a fine barbeque steak dinner followed by some group singing. About 40 people attended. We met Carl Strandberg, who is of Swedish descent and has conducted a good deal of archaeological research (he is a consultant working in aerial photo reconnaissance) in South Dakota, Minnesota, and the northeastern United States on early Scandinavian settlements. He believes, as do I, in the authenticity of the Kensington Rune Stone and is interested in the archaeological work of Landsverk.

We also talked to Brian Murphy, who has led the group in cleaning up Grayson Creek in the Concord area. Among the others we talked to were Margie Bowman, Arthur Emmes, Janice Delfino, Jane Putnam, Kay Kerr (with whom Helen had a long talk on the bus), and Joyce Burr. Janice Delfino talked to me about helping with the attempt to block approval for the Charles Moore development; she suggested I call Supervisor Fred Cooper of the Alameda County Board of Supervisors to try to convince him on this issue.

After the program, Helen and I rode back on the bus to the Holiday Inn. She drove back home and I spent the night here.

Sunday, August 27, 1972 - Livermore - Lafayette

I had breakfast in the dining room of the Holiday Inn with Molly Reeves and Joanne Johnson.

Sunday, August 27, 1972 (con't)

After breakfast, the tour of the Citizens Task Force continued in the bus. There were about 30 participants under the leadership of Lewis Crutcher, Chief of the Planning, Design and Construction Department (PD&C) of the EBRPD. He described much of the territory through which we traveled over the bus's loudspeaker system. We rode first through the Morgan Territory going generally north. There is a problem about the possible subdivision of some of this marvellous wild country into housing developments, which it is hoped the Planning Commissions can stop.

Jane Putnam interviewed me for an article for the Lafayette Sun. The content had to do with President Kennedy's call and the family vote, my impressions upon returning to Lafayette and the University in terms of changes that occurred during my absence, and impressions of life in Washington. I emphasized our delight in coming back to such an outstanding park program as that of the EBRPD.

We drove to Contra Loma Regional Park. Here there is a very nice beach and lake for swimming, but the lake is contaminated with algae. We had coffee and donuts. We then drove on through Pittsburgh and Martinez to Port Costa, an old wheat center whose central district has been purchased by an entrepreneur and made over into an interesting shopping center for antiques. We had a sandwich lunch at the Peach Tree Restaurant. We then continued out to Point Molate where we saw the old Wine Haven Winery on the waterfront, which at one time was the largest winery in the world (now closed). We visited Point San Pablo, then drove through the little village of Point Richmond and hiked up to the top of Nichol Knob (the property purchased by Lucretia Edwards and her husband in order to save it and then resold at cost to the EBRPD). We drove from there back to the park headquarters, where Helen met me and drove me home.

During the tour, I met and talked to Mary Jefferds, John Matheson, Eugene Wolfe, Cliff Glidden, Thomas Schweser, Joanne Johnson, Susan Watson, Molly Reeves, Ann Christofferson, and Helen Hann. The staff members attending were Al Baum and Reed of Overview, and Bill Horne, EBRPD liaison for the Task Force. Tom Schweser is the alternate public member of the Alameda County LAFCO and indicated to me that this was not a very time-consuming job. John Matheson told me about the efforts he and his group are making to save Albany Hill from the highrise apartment development.

At 6:00 p.m., I phoned Mrs. Charles R. (Florene) White in South Gate in regard to the purchase of their 60-foot frontage lot at 9229 San Antonio Avenue, adjoining our family home property at 9237. We agreed to a purchase price of \$18,500. The terms will be as in her letter (copy attached). She will have the escrow papers drawn up tomorrow and send them up airmail-special delivery which Helen and I will sign and return with a check for \$500. The escrow time will be thirty days and, before that time, we will send her the remainder of the down payment. She will take care of the escrow costs. She told me that the designation of the lot as an R-3 lot means that it is eligible for multiple housing units--that is, apartments.

9217-A San Luis Ave.,  
South Gate, Calif.  
August 24, 1972

Dr. Glenn T. Seaborg,  
1154 Glenn Road  
Lafayette, Calif.

Dear Dr. Seaborg,

Again I wish to apologize for us not getting information to you sooner on our lot at 9229 San Antonio Ave., South Gate. We do want to sell it. We have been extremely busy for the past two weeks.

These are our terms:

Price - -\$19,000.00  
Down - - 5,500.00  
Monthly payment - - \$150.00  
Interest rate - - - 8%  
Due Date - - - - 5 years

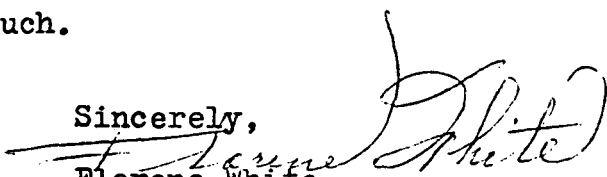
I don't know how familiar you are with South Gate now. I am sure you realize R-3 lots are few and hard to find. This being cleared off makes it worth another thousand dollars.

We were offered twenty thousand for it sometime back before we had the house demolished. At that time we had building plans and were not interested.

Please let us know before you leave if you are interested. We do also have a builder that is interested.

Thank you very much.

Sincerely,

  
Florene White

Monday, August 28, 1972 - Berkeley

I rode to work with Dave. I met with the planning group for the SuperHILAC from 9:00-10:00 a.m. We discussed the general continuing problems with the SuperHILAC and the successful tests with SASSY, which is operating better now following the chromium plating.

I had lunch in the cafeteria with Merv Goldberger and John Rasmussen. Merv told me that the return visit of Chinese scientists to the United States has been agreed to by the Chinese. The group presumably will consist of chemists, physicists, and biologists of an unknown number. It is also not known whether the spouses will be along. The F.A.S. group that went to China consisted of Merv Goldberger (F.A.S. Chairman), Jeremy Stone (Director), and Jerome Cohen. I said I would be glad to help host the group if they enter through San Francisco. The possibility of a dinner at the Faculty Club--including senior and junior people was discussed. F.A.S. has received a \$25,000 grant from the Fund for Peace to help defray the expenses. I told Merv that I had been in touch with Jeremy Stone about the possibility of associating myself in some manner with the F.A.S. and that I would make a decision on this sometime after the first of the year.

I called James Davy at 1:45 p.m. in regard to his asking me if I would be a candidate to serve on the Local Agency Formation Commission (LAFCO) for Contra Costa County. I indicated that I am still not sure that I will have time but would be willing to talk with the people involved. I asked him to notify the Commission, which he said he would do. He will be in touch with Sheila to arrange a meeting with them if it is necessary.

Today I signed my new Will (with Sheila, Eileen Eiland, and Carol Ridge serving as witnesses) and sent it to Kenneth Granberg.

At 3:50 p.m., I talked by phone with Fred Cooper, member of the Alameda County Board of Supervisors. I said that I was sure he was under considerable pressure on the matter of the Charles Moore development to the east of Sunol Regional Park, but I wanted him to know that I have come out on the side of those who think it would be seriously damaging to the wilderness aspect of the park. He asked me if the Citizens Task Force had discussed the letter he wrote about San Leandro Bay. I told him that they are very interested in it and will have a tour of that area. He told me that EBMUD is planning a sewer treatment plant next to the Bay. An approved Bay firm island development is already going to effect the quality of the Bay. He would like to see the EBRPD Board of Directors go on the record as agreeing with the concept of a moratorium on San Leandro Bay while they are setting up planning studies. I told him that I would review his letter and keep it in mind.

I rode home with Dave. This was his last day of work at the Chemical Biodynamics Lab. I took a hike to the water tank with Suki and Bob Jansen, who had dinner with us. We ate in front of the TV to watch the Olympic Games broadcast from Munich, Germany. Later, Bob and Dave went to San Francisco to attend a lecture.



Today I signed the master letters which will be photocopied and sent to members of the EBRPD Citizens Task Force and to the members of CUWA, reporting the desirability and steps taken thus far to acquire the Huckleberry Trail area as a botanic preserve (copy attached). These were sent to Alice Howard in the botany department on the campus who will duplicate and send them out next week.

Tuesday, August 29, 1972 - Berkeley

I spent most of the day wrapping up loose ends on my desk in preparation for my departure to Europe and the Soviet Union tomorrow.

At 11:15 a.m., I phoned Olaf Bloom in Stockholm. He said he has arranged a reunion of our relatives at Skansen Park, including a reservation for a room at Solliden for refreshments. He said Karl and Jenny Adolfsson are coming down from Kopparberg.

I heard part of the talk by D. Vautherin (of Orsay) on "Nuclear Hartree-Fock Calculations."

I had lunch outside the cafeteria with Greiner, Muller, Liljenzin, Kratz, Edelstein, Rasmussen, Poskanzer, and Paul Kienle.

Wednesday, August 30, 1972 - Lafayette - New York

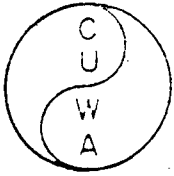
Helen drove me to San Francisco Airport where I boarded United Airlines Flight No. 22, leaving at 8:45 a.m. and arriving at Kennedy Airport in New York at 5:00 p.m. I took the Carey airport bus in to Grand Central and walked to the nearby Chemists' Club where I checked into Room 629.

At the Club I attended a dinner and program in honor of Dr. Archer John Porter Martin of the United Kingdom. There were about 40 people present and I sat at the head table with Martin, Charles E. Griffith (Club President), O. B. J. Fraser (Chairman, Honorary Membership Committee), Richard Moore (Program Chairman), and Milton Harris. Others present were Dr. and Mrs. Butch Hanford, Dick Kenyon, and W. H. Avery.

After dinner we went down to the main hall on the first floor for the ceremony awarding Honorary Membership in the Chemists' Club to Dr. Martin. All of us who had been at the head table at dinner--as well as Dr. Leslie S. Ettre (Scientific Advisor, Chromatography Department, the Perkin-Elmer Corporation)--sat in the front stage area. Harris and I were introduced as former recipients of Honorary Membership.

Griffith presided. Moore introduce Ettre, who spoke on Martin's contributions, and Fraser, who presented Martin with the framed certificate of Honorary Membership. Martin responded with a short biographical account of his work on chromatography. (At dinner he told me that he is now doing some biochemical work on the causes of diabetes.)

Ettre noted to me that the authors of five (including Martin, Ettre and me) of the six papers in a historic summary of chromato-



CITIZENS FOR URBAN WILDERNESS AREAS  
1052 MERCED, BERKELEY, CALIFORNIA 94707

August 29, 1972

Glenn T. Seaborg  
Chairman  
Thomas Bowman  
V. Chairman  
Geraldine Jackson  
Treasurer  
Roger Reave  
C. Secretary  
Karen Davis  
R. Secretary

TO THE MEMBERS OF CUWA:

I wish to make a brief report of our activities to date in trying to establish a Huckleberry Botanic Preserve in the east Oakland hills.

Our proposal was presented to the Board of Directors of the East Bay Regional Park District at their regular meeting on June 6, 1972. Slides of the area were presented, and Dr. Cogswell, Chairman of the Advisory Committee, made a strong recommendation to his Board that they act on the committee report. I urged that they take immediate action to save this area.

The Board, after considering all the evidence and listening to our proposal, passed two resolutions. Resolution 4004 empowered the District to proceed with condemnation of the acreage of the Huckleberry Trail Company, approximately 53 acres along the most botanically important section of the hillside. More land than this is needed to protect these core acres and Board Resolution 4005 was passed, referring consideration of this additional acquisition to Overview and the Citizens Task Force.

Enclosed is a copy of the Montclarion article of May 24, 1972, which I am also sending to all members of the Task Force.

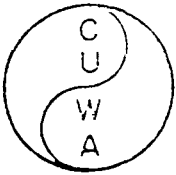
Also enclosed is the EBRPD statement of projected tax revenues, which will indicate the impact of AB925 that granted this tax increase. If the Watson Initiative (ballot proposition 14) passes, EBRPD will have to share with all other special districts (such as Air Pollution, EBMUD, BART, AC Transit) a 50¢ per \$100 ceiling. In this event, EBRPD would probably find its total tax ceiling at 15¢ per \$100 or less, and Huckleberry Botanic Preserve would be seriously jeopardized, as would all other land purchases.

A meeting of CUWA will be called early this fall to discuss the roles of Overview and the Citizens Task Force in property acquisition. We will also look at the impact of the Watson Initiative, the borrowing powers of EBRPD, and further activities for saving urban wilderness areas.

Sincerely,

Glenn T. Seaborg

Enclosures



CITIZENS FOR URBAN WILDERNESS AREAS  
1052 MERCED, BERKELEY, CALIFORNIA 94707

Glenn T. Seaborg  
Chairman  
Thomas Bowman  
V. Chairman  
Geraldine Jackson  
Treasurer  
Roger Reeve  
C. Secretary  
Karen Davis  
R. Secretary

August 30, 1972

To Members of the Citizens Task Force,  
East Bay Regional Park District:

Citizens for Urban Wilderness Areas (CUWA) wishes to call to your especial attention both the desirability and the need for land acquisition to establish the unique Huckleberry hillside area in the Oakland hills as a viable botanical preserve for the East Bay Regional Parks. This area in Contra Costa County borders the city limits of Oakland between Sibley and Redwood Regional Parks.

CUWA--with a membership drawn from 28 conservation organizations including Audubon, The Nature Conservancy, People for Open Space, California Native Plant Society, Regional Parks Association, and Sierra Club--is particularly concerned with areas close to urban centers which have true wilderness value. The Huckleberry area has this unique quality and should be ensured by acquisition of 200 acres of property. The Huckleberry hillside fully qualifies as an "extensive natural environment area," defined as one of the four "park types" in Overview's proposed criteria. This is well established in the unanimous report of the Citizens Advisory Committee, selected by the East Bay Regional Park District in response to public concern. The report, presented at the June 6, 1972, meeting of the District Board, was published in the May 24 Montclarion, a copy of which is enclosed.

Acting on this report at its June 6 meeting, the Board passed resolution No. 4004, which authorizes acquisition from the Huckleberry Trail Company of about 53 acres comprising the crucial core of the area. The Advisory Committee further urged acquisition of adjacent properties, making a total of approximately 200 acres, to provide essential environmental protection for this unique botanic

Citizens Task Force

- 2 -

August 30, 1972

refuge (this had been suggested as early as 1962-63). The Board thereupon passed resolution No. 4005, which refers consideration of this additional acquisition to Overview and the Citizens Task Force.

Criteria set forth by Overview clearly underline the desirability of acquiring the entire Huckleberry area as a botanical preserve. This area, so close to Metropolitan Oakland, is only a short walk from the nearest bus stop. The "type of park"--an environmental preserve--would require only minimal development, such as adequately and properly separated equestrian and foot trails. Indeed, volunteer maintenance of the foot trail has been promised by conservationists. There is no other available area so close to urban centers of such intrinsic suitability to the intended purpose of a natural preserve, and the threat of loss is great. In addition, the Huckleberry area, used as an outdoor classroom for decades because of its unique botanical features, represents an educational resource of superb value. Establishment of a fully viable Huckleberry Botanic Preserve would give a new dimension to the services rendered to the public by EBRPD.

CUWA urges that the Citizens Task Force thoughtfully consider all of these points of merit of the proposed Huckleberry Botanic Preserve in its Master Plan development, and recommends the earliest possible acquisition of all necessary properties.

Glenn T. Seaborg

Enclosure

graphy published by the Pergamon Company were present tonight. Moore displayed a large book containing colored chromatograms representing the work of a German named Runge, published in 1855--this historic volume is in the Chemists' Club library and there is only one other copy of a similar work by Runge in a German museum. I met Dr. E. Heftmann, who works at the Albany U.S. Department of Agriculture Laboratory and lives in Orinda.

Thursday, August 31, 1972 - New York - Frankfurt

I had breakfast in Kim's Coffee Shop next door to the Chemists' Club. I then took a taxi to Kennedy International Airport where I boarded Pan American Flight No. 100, which left at 10:15 a.m. and arrived in Frankfurt, Germany at 12:20 a.m., a half-hour late, after an hour-and-a-quarter's stop at London's Heathrow Airport. There was a half-hour wait for the luggage.

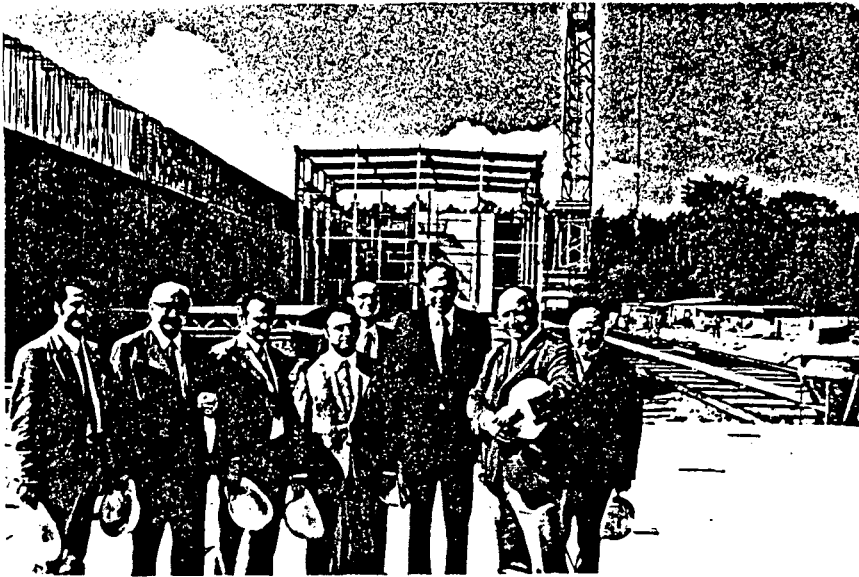
I was met by Gunter Herrmann (Director, Institute of Inorganic and Nuclear Chemistry, University of Mainz), Helmut Ahrens (Assistant at Gesellschaft für Schwerionenforschung [GSI] at Darmstadt), and Norbert Trautman (University of Mainz). Trautman drove us to the Mainz Hilton, about half-way between Frankfurt and Mainz, where I checked into Room 630 at 1:30 a.m. My room has a beautiful overlook of the Rhine River.

Friday, September 1, 1972 - Mainz - Darmstadt

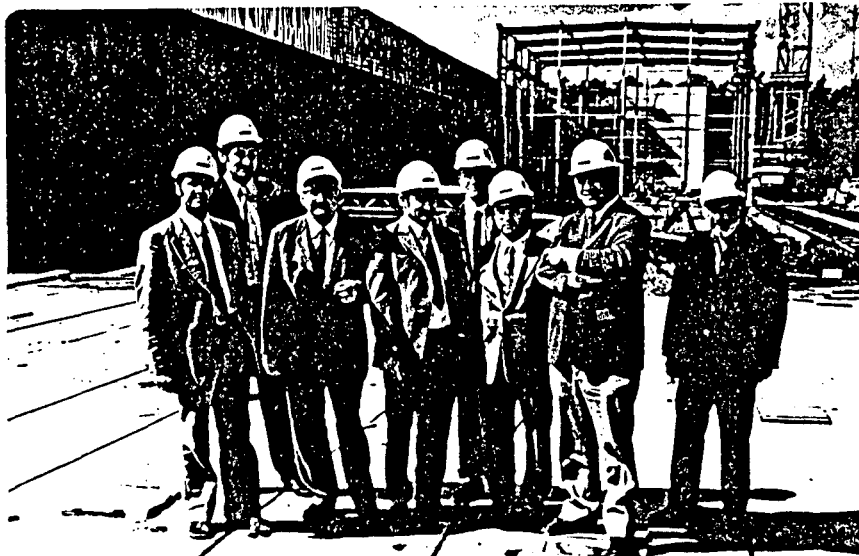
I had breakfast in my room, then rode to the Gesellschaft für Schwerionenforschung (GSI) with Gunter Herrmann and Helmut Ahrens and a driver. At GSI we went into Schmelzer's office, in one of the buildings which is being temporarily occupied while those on the nearby site are being constructed, had coffee and tea, and discussed the plans for, and the progress on, the UNILAC. Present were Christoph Schmelzer (Chairman, Board of Directors, GSI), Hans Otto Schuff (Administrative and Finance Office, GSI), Peter Armbruster, Rudolph Bock and Gunter Herrmann (Scientific members of the Board of Directors, GSI), and Helmut Ahrens.

We went to a nearby room and saw the 3% scale size plexiglas model of the UNILAC. It will have two 350 Kv sources, a Wideroe pre-stripper section, a stripper, and an Alvarez post-stripper. They said this has already saved them its total cost by making it possible to correct errors. This model was described by Tomasz Niewodniczanski (Head of Technical Department, UNILAC Group), whom I had met at the Swierk Laboratory during my visit to Poland at the time of the Curie Centennial in October, 1968 (he has in the meantime escaped, with his family, from Poland).

We then all went to the site of the UNILAC in the nearby pine forest and walked through the buildings which are under construction. Here we were joined by Hans Floeter (Head of Construction Department). I took pictures of the group. The buildings, costing a total of \$20,000,000, should be finished this year. The UNILAC, costing \$15,000,000, should be finished and produce a beam by early 1975. The total cost of everything will come to about \$60,000,000.



GSI, Darmstadt, Germany, 9/1/72: Peter Armbruster, Christoph Schmelzer, Rudolph Bock, Hans Otto Schuff, Helmut Ahrens, GTS, Gunter Herrmann, Hans Floeter.



GSI, Darmstadt, Germany, 9/1/72: Peter Armbruster, Tomasz Niewodniczanski, Christoph Schmelzer, Rudolph Bock, Helmut Ahrens, Hans Otto Schuff, Gunter Herrmann, Hans Floeter.

After this tour, we returned to Schmelzer's office where we were joined by H. Klein (of Ministry of Education and Science in Bonn). We discussed increased collaboration between our Berkeley SuperHILAC group and the GSI group, along the lines of increased numbers of Germans from various places in Germany coming to Berkeley to work. We should let Schmelzer know the type of people we want--I mentioned physicists that could help in the SuperHILAC startup and shakedown procedures. I described in some detail our budget problems. This group then went to lunch in the Julischka Restaurant (Hungarian) in the village of Wixhausen where the temporary quarters of GSI are situated; GSI itself, about a kilometer away, is within the limits of Darmstadt.

After lunch we returned to GSI and toured the buildings where work on the power tubes, Wideroe accelerator electrodes, injection source, etc. is going on. Rolf M. Muller (Head of Structures Department, UNILAC Group) and Norbert Angert (Head of Ion Sources Department, UNILAC Group) helped show me this equipment.

At 4:00 p.m., I gave a talk "Status Report on the Transuranium Elements," illustrated with about 60 slides, in the conference room of the provisional GSI quarters. Schmelzer introduced me and the talk was followed by a few questions. Burkhard Fricke was present and I met Gerd Soff, the doctoral student of Walter Greiner who may come to Berkeley to work with me on calculation of electronic structures of the superheavy elements in a year or so. I talked to Armbruster about the postdoc that Stan Thompson wants from him; there are three possibilities at Julich, all apparently needed there, but Armbruster said he will write Thompson.

Schmelzer and I then went back to his office to continue our talks concerning a possible increased collaborative effort between our heavy ion research efforts. I asked him if Germany could support us financially to the extent of about \$300,000 a year for two years. He has already raised this question with officials in Bonn, but at a lower sum; he hopes to obtain this as an addendum to his budget, not as an additional drain on his present budget. I suggested that they could work with us collaboratively but, on occasion, could work on their own. We agreed that we might exchange informal letters defining this arrangement after some phone calls and preliminary correspondence. He may discuss this further in Bonn the week of September 11 and let me know in Sweden if he wants me to join him. He spoke of the Orsay-Dubna Axis as a rival to a possible Berkeley-Darmstadt Axis. I rode back to the Mainz Hilton Hotel with Herrmann and Ahrens and their driver.

I had a bite to eat in my room and wrote Ghiorso to describe to him my talk with Schmelzer. I then took a walk along the Rhine.

Saturday, September 2, 1972 - Mainz

I had breakfast in my room, then rode in a taxi with Herrmann to the Reactor Building at the University of Mainz. Here I met Peter Dittner, ORNL, who is here with his family on a year's leave of absence. Herrmann and I had a talk in his office about our proposed Berkeley-GSI (and German) cooperative program. He had talked with

Saturday, September 2, 1972 (con't)

Schmelzer following a talk that the latter had had with his senior people after his talk with me yesterday. He told me that it was he who had carried on the preliminary talks with people in Bonn because Schmelzer was on vacation. Apparently he talked to Gunter Lehr, who is in charge of nuclear power and research department of Ministry of Science and Education, having replaced Joachim Pretsch upon his death. (V. Donany, Federal Minister for Science and Technology, has not been directly involved in the talks so far.) Herrmann was optimistic about the chances for getting approval from Bonn and believes that it can be a direct agreement between Berkeley and GSI. He doesn't think I'll need to go to Bonn on my way home from Sweden but that Schmelzer can meet me in Frankfurt to work out some details.

Following my talk with Herrmann, I went into a conference room where I met a number of graduate students and senior scientists. These included N. Kaffrell, H. Folger, G. Franz, G. Tittel, G. Klein, K. Chayawattanakur, K. E. Seyb, W. Herzog, W. Bruinn, J. V. Kratz, Karl Ludwig Kratz (older brother of Jens), H. O. Denschlag, M. Weber, R. Naeumann, H. Franz, E. Roeckl, W. Lauppe, W. Bruchle, and R. Denig. I was told there are about 15 graduate students and 10 senior scientists in the group.

The TV was on and we watched the finals of the 8-oar rowing race in the Olympics from Munich which New Zealand won, with the United States second and East Germany third. Trautman, Armbruster, Ahrens, and Bock were also present.

After this we all walked down to the reactor--a Triga Reactor of 100 KW power, with the capability of 250 MW (40 millisecond) pulses with the flux of  $10^{15}$ . Fritz Strassmann joined us here. The experimental program was described to me by the people involved (outline of discussions attached). A fast chemical separation of technetium isotopes from  $U^{235}$  fission was demonstrated by Trautman, Ahrens and Kaffrell. A number of fast chemical extraction methods were described to me including zirconium extraction with TBP (Trautman, Ahrens, Folger, and Kaffrell), molybdenum extraction with alpha-bensoinoxim (Tittel), ruthenium extraction as the tetroxide into petrolether (G. Franz), actinium separation on cation exchanger (Chayawattanakur), yttrium separation with Dowex-50 (G. Klein), cerium separation, on anion exchanger (Seyb), barium and strontium separation with barium sulfate (Herzog and Grimm), niobium separation on fiberglass filter (Trautman, Ahrens and Kaffrell), volatilization of selenium, tellurium, arsenic, antimony, and tin as hydrides (Folger and J. V. Kratz), hot atom recoil of iodine and bromine to form methyl compounds (K. L. Kratz), fission yield charge distribution (Denschlag), activation analysis for antimony and lead in gun shot traces (Weber, Trautman and Menke), spectra of delayed neutrons from 2-second  $As^{85}$ , palladium extraction with diethyldithio-phosphoric acid (Bruchle), protactinium extraction with diisobutyl carbinol (Trautman, Kaffrell and Denig). Roeckl and Lauppe showed me the mass separator, built for use at GSI, which will be used at the reactor for various mass identifications before it is needed at GSI.



NOTICE CONCERNING PROF!SEABORGs VISIT AT MAINZ, 2<sup>nd</sup> SEP. 1972

## I. Survey of chemical methods (given by N.Trautmann)

## A. Solvent extractions into quasi-solid solvents

1. Experiment shown: Separation of Tc-isotopes from fission products (N.Trautmann, H.Ahrens, N.Kaffrell)
  - a) Apparatus and chemistry
  - b) Separation of  $^{103-108}\text{Tc}$
  - c) Gamma-ray spectra
  - d) Indirect determination of Mo half-lives
  - e) Discussion of decay schemes of Tc isotopes
2. Zr-extraction with TBP from  $\text{HNO}_3$   
 $^{99-102}\text{Zr}$  (N.Trautmann, H.Ahrens, H.Folger, N.Kaffrell)
3. Mo-extraction with  $\alpha$ -benzoimoxim  
 /in work/ (G.Tittel)
4. Ru-extraction as  $\text{RuO}_4$  into petrolether  
 $^{107-109}\text{Ru}$ ,  $^{109}\text{Rh}$  (sep. from Ru by TBP) (G.Franz)

## B. Ion exchange resins

1. Actinium separation on cation exchanger  
 $^{230,231,232}\text{Ac}$  (K.Chayawattanankur)
2. Yttrium-separation with Dowex-50-X 12  
 /in work/ (G.Klein)
3. Ce-separation on anion-exchanger after oxidation with  $\text{PbO}_2$   
 /in work/ (K.-E.Seyb)

## C. Exchange on preformed precipitates

1. Ba- and Sr-separation with  $\text{BaSO}_4$  and  $\text{Fe}(\text{OH})_3$  and oxalate precipitation respectively  
 $^{143,144}\text{Ba}$  and  $^{93-95}\text{Sr}$  (W.Herzog, W.Grimm)
2. Nb-separation on fiberglass filter  
 $^{99-104}\text{Nb}$  (N.Trautmann, H.Ahrens, N.Kaffrell)
3. Volatilization of Se, Te, As, Sb and Sn in form of their hydrides
  - a)  $^{135-137}\text{Te}$ ,  $^{130,132,134}\text{Sb}$ ,  $^{128-132}\text{Sn}$  gamma-ray spectra  
 (H.Folger)
  - b) As- and Se-isotopes: delayed neutron counting, gamma-ray spectra, yield measurements (J.-V.Kratz)

## D. Hot atom reactions

Separation of I and Br from fission products as  $\text{CH}_3\text{I}$  and  $\text{CH}_3\text{Br}$ .  
 Delayed neutron emitters, gamma-ray spectra and yield  
 measurements (K.-L.Kratz)

## II. Further discussions

1. Chart of nuclides. General discussion of nuclides investigated at Mainz (G.Herrmann)
2. Fission Yields (H.O.Denschlag)
  - a) Charge Distribution
  - b)  $Z_p$ -function (WAHL-plott)
  - c) Charge distribution in the chain 132. Investigation of yields via hydride volatilization (R.Naeumann, H.Folger and H.O.Denschlag)
3. Activation analysis: applied research (H.Menke)
  - a) Determination of gun shot traces /Sb and Pb/
  - b) Determination of elements in human hair
4. Volatilization of fission products from solid targets (M.Weber, N.Trautmann, H.Menke)
  - a) Distribution of elements from  $\text{UF}_4$ -targets
  - b) Kinetics of the volatilization-deposition process
5. Spectra of delayed neutrons from 2 sec  $^{85}\text{As}$  (H.Franz and J.-V.Kratz)
6. Mass-separator (Roeckl, W.Launpe)
  - a) Xe-beam *Presumably E. Roeckl of BSK*
  - b) Investigation of rare gases and Hg using a plasma ion source /in work/  
 Investigation of alkali and alkaline earth elements via surface ionization /in work/

## Supplement to I,A

5. Pd-extraction with diethyldithiophosphoric acid  
 $^{113-115}\text{Pd}$  (W.Brüchle)
6. Pa-extraction with diisobutylcarbinol  
 $^{236-238}\text{Pa}$  (N.Trautmann, N.Kaffrell, R.Denig)

We all then went outside for a barbecue. I took pictures of the whole group. After this we went back to the conference room and watched the Olympics on television from Munich. We watched the 400-meter hurdles finals, the 800-meter run (Dave Wottle of the U.S. won), the 100-meter dash for women, etc. Trautman and Herrmann then drove me back to the Mainz Hilton where I had dinner in my room. I spent the evening arranging my slides for my Moscow talks and taking a walk in downtown Mainz.

Sunday, September 3, 1972 - Frankfurt - Vienna - Moscow

Trautman came by the hotel at 6:00 a.m. and drove me to the Frankfurt Airport, where I boarded Pan American Flight No. 72 leaving at 8:00 a.m. and arriving in Vienna, Austria at 9:20 a.m. I was ticketed to go on to Moscow on Aeroflot Flight No. 262 leaving at 11:50 a.m., but this flight was oversold (taken up almost entirely by a Japanese travel group), and there was no place for me. Fortunately, there was a unique second flight (called Aeroflot Charter Flight), nearly full, that I managed to get on; this left at 1:45 p.m. and arrived in Moscow (Shevnenko Airport No. 2) at 7:15 p.m.

I was met by Professor Viktor I. Spitsyn, who had had some difficulty deducing my whereabouts. We rode with a driver to the large new Hotel Rossia, where I am staying as a guest of the Soviet Academy of Sciences. Spitsyn gave me 60 rubles to cover my expenses. The other members of our group from the United States are staying at the National Hotel, just across from the Kremlin. I checked into Suite 11-148 of this 4,000-room hotel. I then joined Spitsyn and his administrative assistant, Yury Mikhailovitch Kuyumgee, for dinner in the restaurant on the top floor; we had a marvellous view of the Kremlin, Basilica, Cathedral, and Lenin's Tomb on a clear, sparkling night. Spitsyn invited me, with expenses paid by the Soviet Academy, to the 50th anniversary observance of the Soviet Union in Moscow on November 28-30, 1972.

Monday, September 4, 1972 - Moscow

I had breakfast in my room. Mikhail Valeryevitch Pospeloff, who will interpret my talk this morning (and who works at the Organic Synthesis Institute), and Yury Ivanovitch Kapshaninoff, serving as a Scientific Secretary of the Symposium on the Chemistry of the Transuranium Elements and a member of the Institute of Physical Chemistry, came by my suite to escort me to the Symposium (program attached). We were driven to the Institute, where the Symposium is being held in the auditorium in which I gave a talk during my August 1971 visit--it has been equipped for simultaneous translation.

Spitsyn made some opening remarks and then introduced me and I gave my remarks in memory of Burris B. Cunningham. I spoke in place of L. B. Asprey, who, I said, could not come because the United States is too poor to furnish the travel funds. Joseph Peterson hadn't arrived yet, so he couldn't give the second half of the talk. Spitsyn next spoke in place of A. P. Vinogradov in memory of some leading Soviet nuclear scientists and transuranium chemists; he mentioned the key work of Khlopin and Kurchatov. I then gave my main talk, "Status Report on the Transuranium Elements." After this we took a coffee

Monday, September 4  
10.30—14.00

I. OPENING OF THE SYMPOSIUM,  
THE FIRST PLENARY MEETING

Chairman *V. I. Spitsyn*

Co-chairman *G. T. Seaborg*

1. *V. I. Spitsyn (USSR)*. Opening Adress.
2. *L. B. Asprey (USA)*. In Memory of Professor Burris B. Cunningham. 30 min.
3. *G. T. Seaborg (USA)*. Status Report on the Transuranium Elements. 30 min.
4. *A. P. Vinogradov (USSR)*. Study of Transactinide Elements in the USSR. 30 min.
- 15 min. coffee break.
5. *G. N. Flerov (USSR)*. Synthesis and Search of New Transuranium Elements. 30 min.
6. *O. L. Keller (USA)*. Some Selected Topics in Actinide, Transactinide, and Superheavy Elements Research at Oak Ridge. 30 min.
7. *N. B. Mikheev (USSR)*. The Methods of Cocrystallization and Adsorption in the Study of Chemical Properties of Ultramicroquantities of the Transuranium Elements. 30 min.

Monday, September 4, 1972 (con't)

break. Here I met John Burnett, Russell Baybarz, L. J. Nugent, Ken Hulet, Peterson, Bob Penneman, Jim Waber, Lew Keller, G. N. Flerov, Yuriy Tsolakovitch Oganessian, Vitalii Goldanskii, and Yurii Tumanov (the Dubna photographer). Nugent said he wants to spend a sabbatical year at LBL, and I said okay. He will visit us next March to discuss it.

Flerov spoke next on "Synthesis and Search of New Transuranium Elements." He expressed some doubts about the chances for success of the "overshoot" method of production of detectable superheavy elements. He said the cost of connecting the two cyclotrons at Dubna was 60,000 rubles. He showed a picture of Xe+9 (1012/sec.) ions going from 3-meter cyclotron, stripped to Xe+30 (2 x 10<sup>10</sup>/sec., 900 Mev) and emerging out of 2-meter cyclotron, which is 70 meters from the 3-meter cyclotron. He showed the drop off in yields (by a factor of 100) in the region of  $A \cong 225$  from fusion-fission reaction due to second fission of the heavy product. However, he hopes for increased yield at  $A \cong 300$ . They now have 10<sup>10</sup> particles/sec. They separated the actinides from the superheavy elements with sulfide precipitation. He showed an ionization chamber for detection of fission fragments which are in coincidence with neutrons (counted by He<sup>3</sup> counters). He spoke vaguely of observing a superheavy element.

Keller spoke next on "Some Selected Topics in Actinide, Transactinide, and Superheavy Elements Research at Oak Ridge." He now favors the +3 as the most stable oxidation state of element 111. N. B. Mikheev spoke next on "The Methods of Cocrystallization and Adsorption in the Study of Chemical Properties of Ultramicroquantities of the Transuranium Elements."



Symposium on the Chemistry of the Transuranium Elements, Institute of Physical Chemistry, Moscow, USSR: September 4-8, 1972.



The Institute of Physical Chemistry: GTS,  
V.I. Spitsyn, Yu. Ts. Oganessian: 9/4/72.

The Home of the Scientists: G.T. Chuburkov, V.S. Koltunov,  
E.M. Frolova, GTS, V.N. Kosyakov, M.V. Vladimirova, I.G.  
Kapshukov, N. Salmenkova, T.K. Shwezov, A.T. Shafiev: 9/4/72.

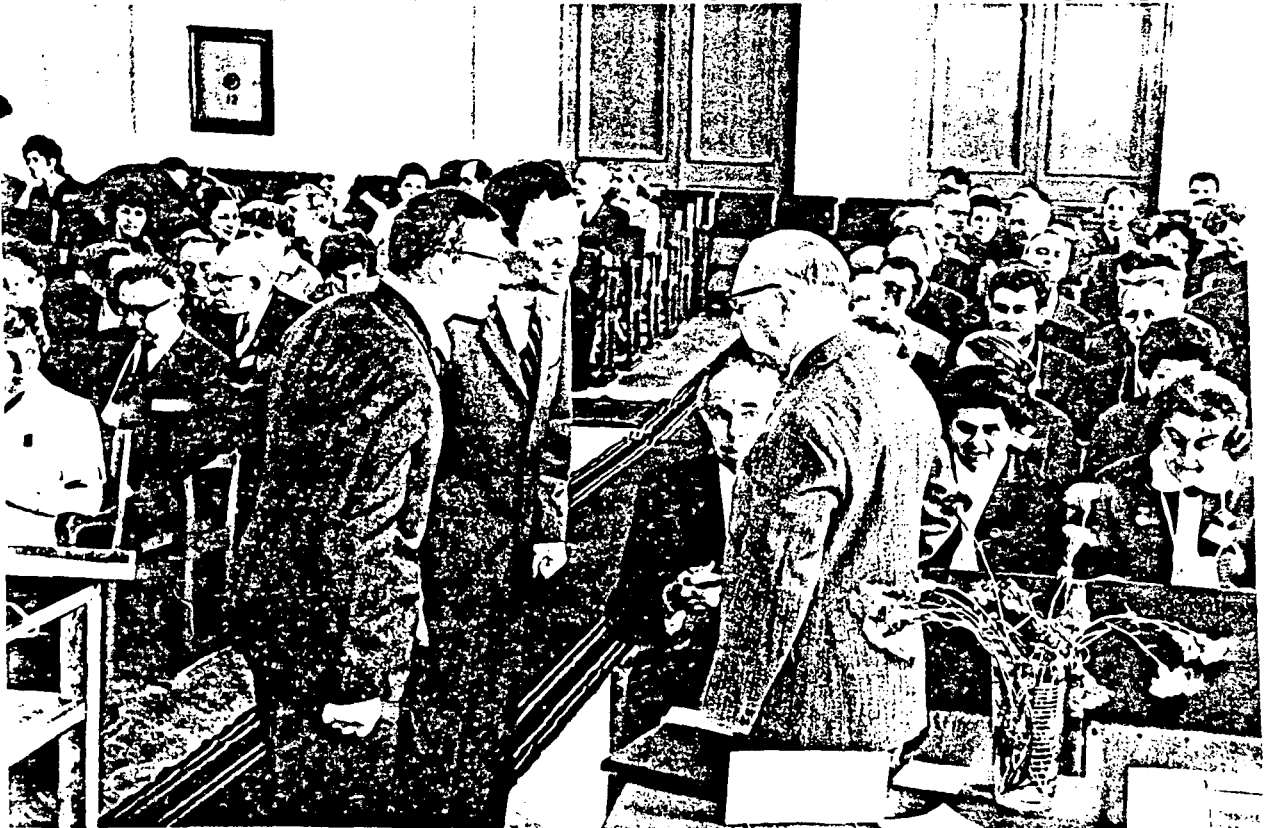




GTS, Yu. Ts. Oganessian, G.N. Flerov, Vitalii Goldanskii.

The Institute of Physical Chemistry: September 4, 1972.

Nicolai Maryashkin, Mikhail V. Pospeloff, Viktor I. Spitsyn.





GTS, O.L. Keller, N. Maryashkin, V.N. Kosyakov: 9/4/72.

V.A. Druin, G.N. Flerov, GTS, Yu. Ts. Oganessian: 9/4/72.



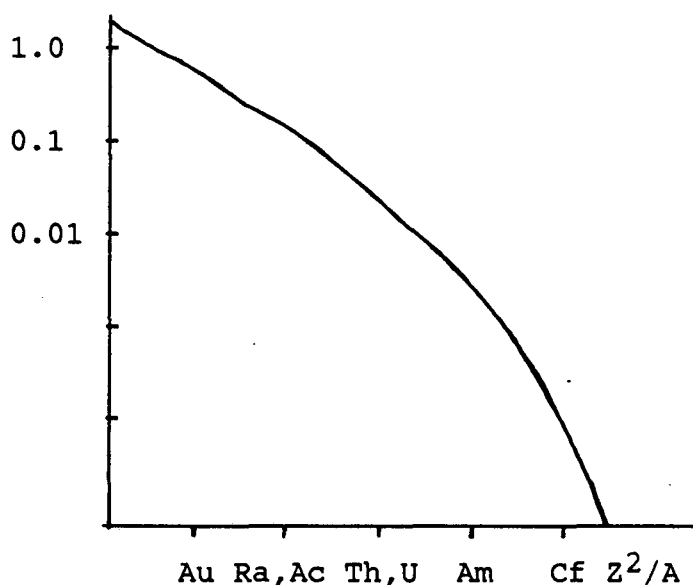




The Institute of Physical Chemistry: G.N. Flerov, B.J. Beyer, O.L. Keller, G. Herrmann, GTS, Yu. Ts. Oganessian: September 4, 1972.

Monday, September 4, 1972 (con't)

At the conclusion of the session, I talked to Oganessian to learn more details of the recent Dubna experiments. These results were obtained within the last few weeks, and the work is still in progress. They have bombarded a thick target of  $U^{238}$  with 860 Mev  $Xe^{136}$  ions and observed  $Cf^{246}$  (cross section  $10^{-32}$   $cm^2$ , 500 alpha emitting atoms per day) and  $Cf^{254}$  ( $10^{-34}$   $cm^2$ ). This must be due to fusion-fission reaction because maximum yield of  $Cf^{246}$  from transfer reaction is  $10^{-36}$   $cm^2$  and of  $Cf^{254}$  is  $10^{-40}$   $cm^2$ . The yield of  $Cf^{254}$  is down by a factor of  $10^4$  from the smooth extrapolated yield of fusion-fission products. The fall-off in yields is as follows for 860 Mev  $Xe^{136}$  ions on thick targets:



Au from U target

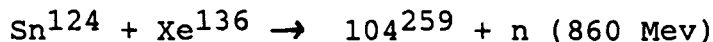
Ra, Ac from Ta target

Th, U from Bi target

Am, Cf from U target

Looking for Fm from U target.

They expect the yield of element 114 to go up again due to the fission barrier. The Sn + Xe experiment was as follows:



Target was at an angle and swung quickly over to an S.F. detector, but they failed to detect any S.F. They have found 20% S.F. in the decay of 4.5-second  $104^{259}$  (have not looked for alpha particles). Total cross section for the production reaction was assumed to be  $2 \times 10^{-33}$   $cm^2$  and the reaction was  $Pu^{242} + Ne^{22} \rightarrow 104^{259} + 5n$ .

I loaned my slides to Spitsyn for reproduction. They want to publish my talk in the Symposium Proceedings. V. N. Kosyakov will help edit my taped talks. I then rode back to the Rossia Hotel with Pospeloff and Tumanov, who accompanied me to my room where I had a sandwich. After this, we rode to the House of Scientists where, from 5:00-7:30 p.m., I attended a reception for the Symposium participants. Spitsyn made a toast to which I responded, after which there were several other toasts, followed by a stand-up buffet supper. I met, among many others, Professor Yu. A. Zolotov, Assistant Director of the Vernadsky Institute of Geochemistry and Analytical Chemistry (in charge of Analytical Chemistry), a deputy to A. P. Vinogradov.

I had another talk with Flerov and Oganessian. They will visit the United States for three weeks in March-April 1973 and would like an invitation to visit LBL for several days (they will also visit BNL and ORNL). Oganessian can't come to work at Berkeley now because he has been made head of a physics division at Dubna (the division in which the Xe bombardments are taking place). Flerov invited me to a conference on the Superheavy Elements to take place at Dubna around December 12, 1972; I said I couldn't come at that time. He also invited Swiatecki and, when I said we lacked the travel money, he said Dubna could pay his round trip fare from New York.

Oganessian told me that they tried to make  $^{122}_{304}$  (same nucleus as from  $\text{Ge}^{76} + \text{Th}^{232}$ ) by overshoot reaction  $\text{Zn}^{68} + \text{U}^{238} \rightarrow ^{122}_{304} + 2n$  with negative results (cross section less than  $10^{-31} \text{ cm}^2$ ).

Oganessian and Flerov told me that in superheavy element fraction (CuS) from  $\text{Xe}^{136} + \text{U}^{238}$  they found one S.F. count per week by proportional counter and coincident neutron counting with the S.F. confirmed by measuring track in glass plate. The cross section is  $10^{-33} \text{ cm}^2$  for 50-day half life. Maximum is  $10^{-31} \text{ cm}^2$  from yield curve. This S.F. activity gives only 2-3 neutrons per fission. They will try to measure the S.F. fragment energies. This puzzles them and they feel we should get together to discuss such problems in detail--hence the invitation to Swiatecki. I said I would think about this puzzling S.F. activity. They have just increased their  $\text{Xe}^{136}$  beam intensity to  $3 \times 10^{10}$  particles per second, hope to go up to  $6 \times 10^{10}$ , and hence produce a sample giving one S.F. per day. Any uranium S.F. contamination is down to one S.F. count per year. They have a very special scheme for stripping the heavy ions in the center of the second (2-meter) cyclotron. They use 25 microgram per sq. cm. carbon foil and, to prevent burn-out, they put 20 such foils in a nickel grid holder (spider) and rotate the system at a rate of 100 turns per minute.

Gunter Koch, of Gmelin, asked me to tell Matti Nurmi that his chapter is needed soon because it is delaying the publication date. I rode back to the Hotel with Professor and Mrs. Spitsyn, who dropped me off there.

Tuesday, September 5, 1972 - Moscow

I had breakfast in my room, then rode to the Institute with Kapshaninoff and Olga Polukarov (of the Institute), who served as a guide and hostess. I attended the Symposium where the talks were

Tuesday, September 5, 1972 (con't)

given as listed in the program (copy attached). The first was by B. P. Nikolsky. J. R. Peterson, as the second speaker, spoke on the contributions of Burris Cunningham and on "Recent Advances in the Determination of the Physico-Chemical Properties of Curium, Berkelium, Einsteinium." He emphasized Cunningham's invention of the single ion exchange resin bead method. He showed a picture of his berkelium metal (1.7 micrograms)--the first to be produced. Properties of berkelium metal are indicative of a trend toward divalency in the heavier actinide metals. He described the production of californium dibromide--the first production of a divalent actinide compound. He showed a polarogram of the reduction of californium (III) to californium (II) at about the same potential as the samarium (III)-(II) reduction.

The third speaker was R. A. Penneman on "The Elucidation of Fluoride Structures Using Single X-Ray and Optical Microscopy Techniques." He made particular reference to Neil Bartlett's synthesis of a fluoride of pentavalent gold. After the fourth talk, by L. V. Sudarov, we took a coffee break.

N. N. Krot gave his talk on higher oxidation states of neptunium and plutonium. He expects that plutonium (VIII), as  $\text{PuO}_6^{-4}$ , in alkaline form, should be possible to produce--the best method should be the oxidation of plutonium (VII) in alkaline solution. Next Jim Waber spoke, in place of M. Pages who didn't come to the Symposium, on "Prognosis on the Chemistry of the Transuranium Elements." He spoke without his slides because these were to be sent to him in Leningrad, where he visited Mendeleev's laboratory, but failed to arrive. He described calculations on quasimolecules formed by thorium and germanium. He also discussed detecting x-rays of elements 122 in SASSY. He then spoke on the calculational chemistry of elements 110-112.

This was followed by the scheduled speakers A. Yu. Tsivadze, C. Musikas, and V. P. Shilov. I. Alimarin (of Moscow University) gave me an autographed copy of his book, co-authored by M. N. Petrikova on "Inorganic Ultramicroanalysis" and some reprints on this subject.

We then took another coffee break. L. I. Guseva, M. K. Chimutova and B. F. Myasoyedov, three of the five authors, gave me an autographed copy of "Analytical Chemistry of Transplutonium Elements, Am-Ku," which was published today. They work at the Institute of Geochemistry and Analytical Chemistry. I met Michael Eugene Alexandre Hussonnois (of Orsay), who is working at Dubna on the chemical identification of actinides (currently fermium) produced in the bombardment of uranium with xenon ions. I talked to Cornelius Keller about his book on The Chemistry of the Transuranium Elements; he liked my review in Nature and asked me to send him any errors I find in the book.

I then heard part of the remainder of the talks in the program. After, I went with Kapshaninoff and Lew Keller to the Gorky Park of Culture and Leisure where we took a walk for about an hour.

Tuesday, September 5  
Morning Session, 9.30—14.00

II. PHYSICAL AND CHEMICAL PROPERTIES OF THE  
SIMPLE AND COMPLEX COMPOUNDS OF THE  
TRANSURANIUM ELEMENTS

Chairman *B. P. Nikolsky*

Co-chairman *A. N. Nesmeyanov*

1. *B. P. Nikolsky, M. V. Posvolsky, G. S. Markov (USSR)*.  
Acidocomplex Salts in the Actinide Chemistry. 20 min.
2. *J. R. Peterson (USA)*. Recent Advances in the Determination of the Physico-Chemical Properties of Curium, Berkelium, Einsteinium. 20 min.
3. *R. A. Penneman, R. R. Ryan (USA)*. The Elucidation of Fluoride Structures Using Single X — Ray and Optical Microscopy Techniques. 20 min.
4. *L. V. Sudakov, I. I. Kapshukov (USSR)*. X-Ray Electron Diffraction Study of Curium Oxides. 15 min.

15 min. coffee break

5. *N. N. Krot, A. D. Gelman, M. P. Mefodeva, V. P. Shilov, V. F. Peretrukhin, F. A. Zakharova (USSR)*. Some Features of the Chemistry of Neptunium and Plutonium in the High Oxidation States. 15 min.
6. *M. Pagès F. Nectoux, W. Freundlich (France)*. Synthesis and Identification of Heptavalent Neptunium and Plutonium. 15 min.
7. *A. Yu. Tsivadze, N. N. Krot, B. I. Muchnik (USSR)*. The Infrared Absorption Spectra of Neptunium Compounds. 15 min.
8. *C. Musikas (France)*. Some Properties of U (V) and Transuranium (V) Ions in Solution. 15 min.

9. *V. P. Shilov, V. B. Nikolaevsky, N. N. Krot (USSR)*.  
The Behaviour of Americium (VI) and (V) in  
Some Complexing Media. 15 min.

15 min. coffee break.

10. *V. M. Vdovenko, V. A. Vodovatov, L. G. Mashirov,  
D. N. Suglov (USSR)*. The Bond Strength  
in the Actinyl Ions. 20 min.
11. *W. Müller, J. Fuger, J. Spirlet (GFR, Belgium)*. The  
Preparation and Investigation of High — Puri-  
ty Americium Metal. 15 min.

#### Discussion

#### Afternoon Session, 16.00—18.00

12. *I. Zvara, T. S. Zvarova, V. Z. Belov, Yu. S. Korot-  
kin, M. P. Shalaevsky (USSR)*. Gas Chroma-  
tography and Thermochemistry in the  
Study of Transuranium Elements. 20 min.
13. *Yu. A. Barbanel (USSR)*. Octahedral Complexes of  
Transuranium Elements. 15 min.
14. *C. Keller (GFR)*. Preparation and Properties of Trans-  
uranium Elements — Nobel Metal Alloy Pha-  
ses. 15 min.
15. *D. Damien, R. Berger (France)*. The Crystal Chemist-  
ry of Some Transuranium Element Chalcogeni-  
des. 15 min.
16. *E. P. Derevyanko, S. V. Pirozhkov, E. G. Chudinov  
(USSR)*. Some Aspects of the Chemistry of Ac-  
tinide Elements. 15 min.
17. *A. A. Elesin, A. A. Zaitsev (USSR)*. Some Regular-  
ities in the Complex Formation of Trivalent  
Ions of Americium, Curium, and Promethium  
with Phosphorus and Carboxyl -- Containing  
Ligands. 15 min.

#### Discussion.

At 4:00 p.m., the afternoon session began. V. Z. Belov described the Dubna work on gas chromatographic separation of transuranium elements. Yu. A. Barbanel spoke, then Cornelius Keller spoke on preparation of actinide-noble metal alloys by "coupled reduction"--i.e., reduction by hydrogen. He tried unsuccessfully to produce hexavalent curium by heating a mixture of  $\text{Li}_2\text{O}$  and  $\text{CmO}_2$  with oxygen. The next talks were given by D. Damien and E. G. Chudinov--the last paper was not given due to the absence of the authors.

Andre A. Nesmeyanov (brother of the former President of the Soviet Academy of Sciences) gave me an autographed copy of his book Manual of Radiochemistry, which will be mailed to me. I rode back to the Rossia Hotel with Kapshaninoff and Nicolai Maryashkin, who works at the Computer Center of the Soviet Academy of Sciences and is serving as an interpreter at the Symposium. He is familiar with the work of Klaus Ruedenberg of Iowa State University and of Frank Harris and Henry Schaefer of Berkeley because he also is doing computer calculations on quantum chemistry.

M. V. Naidionov and Ilgis Timerbulatov dropped by my suite at 6:45 p.m. to pick up some of the galley sheets of our "Report of the U.S. Atomic Energy Commission Delegation to the U.S.S.R., August 1971" to check the spelling of the names of our Soviet hosts in it.

Wednesday, September 6, 1972 - Moscow

I had breakfast in my suite, then rode to the Symposium in an Institute car with Olga. I heard talks as scheduled in the program (copy attached), except for the first two which were not given. Talks were delivered by M. P. Mefodeva, Yu. S. Korotkin, and R. Guillaumont.

We then had a coffee break, during which I took a walk with Lew Keller. He told me that Zvara told him that, during his coming visit to Dubna, Flerov is going to ask him for (1) a physicist from ORNL to work at Dubna, (2) one mg. of curium-248, and (3) electronic and detection equipment for alpha particle measurements.

After the break, I heard the paper given by A. N. Kamenskaya on "Synthesis of Cf, Es and Fm in the Divalent State in the Aqueous Ethanolic Solutions." E. K. Hulet spoke next on "Reduction Studies of Trivalent Californium and Einsteinium." Attempted sublimation of einsteinium triiodide leads to low yields of sublimate and distinct color changes which may be evidence for an easily producible einsteinium diiodide.

R. D. Baybarz talked on "The Micro-Chemistry of Californium and Einsteinium." Metallic californium is divalent. Metallic einsteinium is more volatile than californium and is more completely divalent. Einsteinium dibromide is produced about as easily as ytterbium dibromide. Californium dibromide is about equal to samarium in difficulty of production. Next N. B. Mikheev spoke on "Reduction of Mendelevium to the Lowest Valent State." Their co-crystallization experiments with  $\text{CsCl}$  seemed to establish univalent mendelevium when reduced with metallic magnesium or ytterbium (II) in ethanol solution. This is reasonable because univalent mendelevium contains 14 5f electrons.

Wednesday, September 6 («Contd»)

Morning Session, 9.30—14.00

Chairman *J. I. Skorovarov*

Co-chairman *O. L. Keller*

18. *B. N. Laskorin, E. A. Filipov, J. I. Skorovarov, V. G. Fomenkov, I. S. Serebryakov, A. A. Ilinsky, G. F. Bebikh, V. V. Kireev (USSR)*. Complex Formation of Actinides with Cyclotriphosphazotrienes. 20 min.
19. *D. Nebel (GDR)*. On the Chemistry of Plutonium Complexes. 15 min.
20. *M. P. Mefodeva, V. I. Blokhin, A. D. Gelman, N. N. Krot (USSR)*. On the Synthesis of Some New Neptunium Compounds. 15 min.
21. *Yu. S. Korotkin (USSR)*. Hydrolysis of Transuranium Elements and their Complex Formation in the Nitric and Perchloric Acid Solutions. 15 min.
22. *R. Guillaumont, H. Melvier (France)*. Hydrolysis and Complexing of Tetravalent Plutonium. 15 min.

15 min. coffee break.

### III. THE REDOX REACTIONS OF TRANSURANIUM ELEMENTS

Chairman *N. B. Mikheev*

Co-chairman *E. K. Hulet*

1. *N. B. Mikheev, V. I. Spitsyn, A. N. Kamenskaya, I. A. Rumer, R. A. Dyachkova, B. A. Gvozdev, N. A. Rozenkevich, L. N. Auerman (USSR)*. Synthesis of Cf, Es and Fm in the Divalent State in the Aqueous Ethanolic Solutions. 20 min.
2. *E. K. Hulet, J. F. Wild, R. W. Lougheed, W. H. Hayes (USA)*. Reduction Studies of Trivalent Californium and Einsteinium. 20 min.



3. R. D. Baybarz, R. G. Haire (USA). The Micro-Chemistry of Californium and Einsteinium. 15 min.
4. N. B. Mikheev, V. I. Spitsyn, A. N. Kamenskaya, I. A. Rumer, B. A. Gvozdev, N. A. Rozenkevich (USSR). Reduction of Mendelevium to the Lowest Valent State. 20 min.

15 min. coffee break.

5. A. K. Pikaev, M. P. Mefodeva, F. A. Zakharova, V. P. Shilov, N. N. Krot, A. D. Gelman, V. I. Spitsyn (USSR). Radiolysis of the Alkaline Aqueous Solutions of Hexa and Heptavalent Neptunium and Plutonium Compounds. 15 min.
6. M. V. Vladimirova, I. A. Kulakov, A. A. Ryabova (USSR). Radiational Chemical Behaviour of Transuranium Elements in Nitric Acid Solutions. 15 min.

#### Discussion.

Afternoon Session, 16.00—18.00

Chairman N. N. Krot,

Co-chairman D. Cohen

7. V. S. Koltunov, G. I. Zhuravleva, V. I. Marchenko, M. F. Tikhonov (USSR). Features of the Kinetics and Mechanism of Some Redox Reactions of Neptunium, Plutonium and Uranium. 20 min.
8. D. Cohen (USA). Oxidation — Reduction Reactions of the Transuranium Elements. 20 min.
9. A. G. Rykov (USSR). Thermodynamics of the Cation — Cation Redox Reactions of Uranium and Transuranium Elements. 20 min.
10. E. M. Erolova, G. A. Timofeev, A. G. Rykov (USSR). Kinetics of the Redox Reactions of Uranium and Neptunium in Anhydrous Media. 15 min.

Wednesday, September 6, 1972 (con't)

During the next coffee break, I talked to V. Z. Belov and Yu. Ts. Oganessian about visiting Dubna on Saturday. After, I heard A. K. Pikaev, then M. V. Vladimirova, speak. At the end of the session, I rode back to the hotel with Mikhail and Nicolai.

The first talk in the afternoon session was by D. Cohen. (The scheduled first paper was not given first because of trouble with the simultaneous translation apparatus.) He described attempts to observe various oxidation states of various actinide elements in alkaline solutions and in solid sodium hydroxide. The translation apparatus having been repaired, V. S. Koltunov gave his talk, followed by A. G. Rykov, and, finally, E. M. Frolova.

After the afternoon session, I rode with Pospeloff to the Institute of U.S. Studies (2/3 Khlebny Street) where, from 6:00-7:00 p.m., we met with Dr. G. A. Arbatov, Director, and Vladimir Krestianov, Scientific Secretary. Arbatov told us that the Institute is a part of the Soviet Academy of Sciences and is housed in the 17th-18th century estate of the dynasty of Volkanski. They have 250 people now, at this and other sites in Moscow, and expect to level off at some 400-450 people in a few years.

Arbatov recalled his visit to Berkeley early in 1969 and especially his visit to the Political Science Department. I told him that the Department's Administrative Assistant at that time is now my Administrative Assistant at LBL, and he said he remembers meeting her. I described to him briefly my visit to the Soviet Union last year, my return to my position at Berkeley, and my interest in arms limitation.

We then launched into a discussion of arms limitation and disarmament. Arbatov said that, although he was generally pleased by the results of the SALT talks, he was worried about certain aspects of the aftermath. He mentioned Senator Jackson's attempts to interpret the Agreement in a manner which is unilaterally favorable to the U.S. and the continued development of MIRV. He hoped that the five-year provisional agreement could soon be turned into the more permanent form. We discussed the NPT and he said he thought this can be successful only if the nuclear powers take concrete steps toward nuclear disarmament.

He expressed some doubts about Plowshare, feeling that its value may not be great enough to overcome the difficulties it puts in the way of a Comprehensive Test Ban Treaty because of the possibility for clandestine weapons testing it provides. This led to a discussion of the prospects for a Comprehensive Test Ban Treaty. I suggested that these prospects might be improved, from the standpoint of reducing the opposition, if (1) provisions were made in the Treaty for limited proof testing of stockpile nuclear weapons and (2) future date of some 2-3 years were set as the effective date of the Treaty to allow the nuclear weapons scientists to plan a transition to the stop of all nuclear weapons testing.

In response to my question, Arbatov described the broad range of studies of the Institute. He covered three areas--study of (1) the problems of economics, government, etc. of the U.S., (2) the internal problems of the U.S. such as race, poverty, etc., and (3) the U.S. Military Establishment and the general disarmament and arms limitation area.

In conclusion, Arbatov invited me to keep in touch and visit him during any of my visits to the Soviet Union and I in turn invited him to visit me at Berkeley. I told him of my talks with Mason Willrich, who may come to work with me at Berkeley, and he recalled his visit with Willrich at the University of Virginia in connection with a workshop that led to the publication of Willrich's book.

After this meeting, I rode with Pospeloff to the home of Vitalii and Mila Goldanskii, where I had dinner with a group consisting of the Goldanskiis and their son Andrew, Vitalii's sister Mira Goldanskii, Dr. and Mrs. Ken Hulet, and Yuri Kagan, solid state theorist working at the Kurchatov Institute. We had a fine evening of food and conversation. Vitalii drove the Hulets and me to our hotels.

Thursday, September 7, 1972 - Moscow

I had breakfast in my suite, then rode to the Symposium with Olga Polukarov. I heard the talk by L. J. Nugent on "Electron Transfer and f-d Absorption Bands of Some Lanthanide and Actinide Complexes and the Standard (II-III) Oxidation Potentials for Each Member of the Lanthanide and Actinide Series." His calculations of the (II-III) potential for einsteinium differs by 0.3 volt from that determined by the cocrystallization experiments of N. B. Mikheev and co-workers, and therefore he suggested that Mikheev re-evaluate or repeat this experiment. Following this, I heard the scheduled talks by I. A. Rumer, V. N. Kosyakov, and A. G. Rykov.

During the time for the coffee break, pictures were taken of the whole symposium group in front of the Institute building. Hulet also took some pictures and will send me copies. During this break, I described to John Burnett my discussions with Schmelzer and Herrmann regarding GSI-Berkeley cooperation. I emphasized that the Germans want the arrangements to be at the GSI-Berkeley level.

After this, the talks continued in a rearranged order, with some eliminated, in order to finish in time for all participants to visit the Institute of Physical Chemistry radiochemistry laboratories this afternoon. The titles of the talks were as listed in the programs (copy attached). W. Müller, of West Germany's Karlsruhe Laboratory, spoke first describing the separation of multigram quantities of curium-244, americium-243 (and americium-241). Müller told me they bought a 10 gm mixture of curium-244 and americium-243 from the U.S. for \$100,000, a transaction that was initiated as a result of my visit to Karlsruhe. They want to buy another 10 gm. from the U.S.

Andre Chésne (who worked at Berkeley with Stan Thompson in 1957-58) talked on the separation of transuranium elements by triaurylamine extraction. Then E. G. Chudinov spoke on the isolation of transplutonium elements. He mentioned the isolation of 400 mg of

Thursday, September 7. («Contd»)  
Morning Session, 9.30—14.00

Chairman *A. K. Pikaev*

Co-chairman *L. J. Nugent*

11. *L. J. Nugent (USA)*. Electron — Transfer and  $f \rightarrow d$  Absorption Bands of Some Lanthanide and Actinide Complexes and the Standard (II—III) Oxidation Potentials for Each Member of the Lanthanide and Actinide Series. 20 min.
12. *N. B. Mikheev, I. A. Rumer (USSR)*. Determination of the Standard Redox Potential of Transition  $Me^{2+} \rightleftharpoons Me^{3+} + e$  for Cf and Es. 20 min.
13. ~~*G. M. Kazakova, V. N. Kosyakov (USSR)*~~. Redox Behaviour of Berkelium in the Nitric Acid Solutions. 15 min.
14. *A. A. Frolov, A. G. Rykov (USSR)*. Study of the Interaction of Neptunium (V) with Multicharged Cations and its Effects on Kinetics of the Reactions with Neptunium Ion Participation. 15 min.

15 min. coffee break

#### IV. THE SEPARATION OF TRANSURANIUM ELEMENTS

Chairman *G. N. Yakovlev*

Co-chairman *W. Müller*

1. ~~*A. A. Zaitzev, G. I. Kuznetsov, N. S. Kurochkin, A. P. Feofanov, V. T. Filimonov, G. N. Yakovlev (USSR)*~~. The Separation of Transplutonium Elements by Extraction with the Organophosphorus Acids. 20 min.

2. *A. Chesné (France)*. French Experience of the Separation of Transuranium Elements by TIA Extraction. 20 min.

3. ~~G. V. Korpusov, E. N. Patrusheva, M. S. Dolidze, A. I. Trubnikova (USSR). The Extraction Methods of Separation of Transplutonium Elements in Trivalent State. 20 min.~~

4. ~~B. F. Myasoedov (USSR). Use of High - Valent States in the Separation and Determination of Americium and Berkelium. 20 min.~~

Not present 15 min. coffee break.

5. ~~D. E. Ferguson, W. H. Hale (USA). Separation of the Transuranium Elements by Ion Exchange. 20 min.~~

6. ~~L. I. Guseva, I. A. Lebedev, B. F. Myasoedov, G. S. Tikhomirova (USSR). Isolation of Transuranium Elements on the Ion - Exchange Resins in Aqueous Alcohol Media. 20 min.~~

Discussion.

Afternoon Session, 16.00-18.00

Chairman *B. F. Myasoedov*  
Co-chairman *A. Chesné*

7. ~~B. N. Laskorin, E. A. Filipov, I. I. Volodin (USSR). Extraction of Plutonium and Uranium by Tertiary Aliphatic Phosphinioxides. 20 min.~~

8. ~~W. Müller, K. Buijs, J. Reul (GFR). The Separation and Purification of Am and Cm on the Multi-gram Scale. 20 min.~~

9. ~~V. N. Kosyakov, E. T. Chudinov, I. K. Shvetsov (USSR). Some Methods of Isolation of the Transplutonium Elements. 20 min.~~

10. ~~G. Koch, Z. Kolaric, H. Hang (GFR). Solvent Extraction - Ion Exchange Process for the Recovery of Transplutonium Elements from Power Reactor Fuels. 20 min.~~

11. ~~G. V. Korpusov, G. I. Kuznetsov, E. N. Patrusheva, G. I. Popkov, G. N. Yakovlev (USSR). Study of the Counter - Current Extraction Methods of the Transplutonium Elements Separation in Trivalent State. 15 min.~~

Discussion.

Friday, September 8. («Contd») Morning Session, 9.30-14.00

Chairman *I. K. Shvetsov*  
Co-chairman ~~D. E. Ferguson~~

*A. Chesné*

12. ~~G. J. Beyer, F. Molnar, W. Raiko, H. Tyrroff, E. Herrmann (Dubna). Contribution to the Preparation of Monoisotopic Actinide Preparates. 20 min.~~

13. ~~M. K. Chmutova, B. F. Myasoedov, N. E. Kochetova, B. Ya. Spivakov, Yu. A. Zolotov (USSR). Extraction of Transplutonium Elements by the Mixtures of Reagents. 20 min.~~

14. ~~A. M. Rozen, Z. I. Nikolotova, N. A. Kartashova, B. V. Martynov, L. A. Mamaev (USSR). Some Regularities in the Extraction of Actinide Elements. 15 min.~~

15. ~~A. I. Shafiev, Yu. V. Efremov (USSR). Separation of Actinides on Zirconium Phosphate. 15 min.~~  
15 min. coffee break.

V. THE PROBLEM OF TRANSURANIUM ELEMENTS IN THE LIGHT OF D. I. MENDELEEV'S PERIODIC LAW

Chairman *G. T. Seaborg*  
Co-chairman *V. N. Grebenchikova*

1. *G. T. Seaborg (USA). The Transuranium Elements and Mendeleev's Periodic Table. 20 min.*

Thursday, September 7. (~~"Contd"~~)

Morning Session, 9.30-14.00

1. N.B. Mikheev, I.A. Rumer (USSR). Determination of the Standard Redox Potential of Transition  $Me^{2+} \rightleftharpoons Me^3 + e^-$  for Cf and Es. 20min.

2. G.M. Kazakov, V.N. Kosyakov (USSR). Redox Behaviour of Berkelium in the Nitric Acid Solutions. 15min.

3. A.A. Frolov, A.G. Rykov (USSR). Study of the Interaction of Neptunium (V) with Multicharged Cations and its Effects on Kinetics of the Reactions with Neptunium Ion Participation. 15min.

15 m i n. coffee break

4. W. Müller, K. Buijs, J. Reul (CFR). The Separation and Purification of Am and Cm on the Multigram Scale. 20min.

5. A. Chesné (France). French Experience of the Separation of Trans-uranium Elements by TLA Extraction. 20min.

6. V.N. Kosyakov, E.T. Chudinov, I.K. Shvetsov (USSR). Some Methods of Isolation of the Transplutonium Elements. 20min.

~~4.~~ B.F. Myasoedov (USSR). Use of High-Valent States in the separation and Determination of Americium and Berkelium. 20 min.

*J.M.* ~~8.~~ G. Koch; Z Kolaric, H. Hang (CFR). Solvent Extraction-Ion Exchange Process for the Recovery of Transplutonium Elements from Power Reactor Fuels. 20min.

7. L.I. Guseva, I.A. Lebedev, B.F. Myasoedov, G.S. Tikhomirova (USSR) Isolation of Transuranium Elements on the Ion-Exchange Resins in Aqueous Alcohol Media. 20 min.

Discussion

Thursday, September 7, 1972 (con't)

curium-244 and hundreds of micrograms of Bk-249. He described processes for the isolation of berkelium, californium and einsteinium, as well as americium and curium. He mentioned the use of extraction chromatography with trioctyl amines and triauryl amines. The SM-2 reactor at Melekes (flux  $2 \times 10^{15}$ ) was used for irradiations to a total integrated flux of  $2-6 \times 10^{22}$ . After his talk, I spoke with Chudinov and he told me that the total quantities they have separated are as follows: grams of Am-243 and Cm-244, milligrams of Cf-252, hundreds of micrograms of Bk-249, and micrograms of Es-253.

At the coffee break, I talked to Andre Zakharov of the Institute of Physical Chemistry who said they have invited George Dienes of Brookhaven to visit the Institute and other places in the Soviet Union to discuss his work in solid state physics, but they have received no answer; I said I would contact Dienes and encourage him to reply. I also met with Naidionov and Timerbulatov and they gave me the corrected galley sheets of our 1971 Soviet trip report. After the break, I heard the paper by L. I. Guseva on the use of ion exchange resins to isolate transuranium elements.

I then rode with Pospeloff to the headquarters of Znanie (4 Serova Street). I met from 2:30-3:30 p.m. with Vladimir Maslin, a Vice President of Znanie (a career position), Kirsanov Sergei, Chief of the International Department of Znanie (a career position), Vitalii Goldanskii, recently re-elected to a five-year term as Vice President for Natural Sciences of Znanie, and Mikhail V. Pospeloff, the interpreter furnished by the Soviet Academy of Sciences who came with me. (Y. Fishevsky was away on vacation and Ivan Artobolevskii was at home ill.)

Maslin opened our meeting by saying that Goldanskii had been assigned responsibility for the AAAS-Znanie Exchange and copies of correspondence with Fishevsky concerning these matters should be sent to him at the Znanie address.

Goldanskii, representing Artobolevskii, presented me with a Znanie 25th Anniversary Medal, two 25th Anniversary lapel pins, a copy of the 1971-72 edition of the Znanie publication "Science and Knowledge" and one of the 1972 edition of "Future of Science." He said the 25th anniversary had been observed at the recent 6th Congress of Znanie, held in the Kremlin and attended by 1200 people, at which time Znanie was presented with the Order of Lenin. He told me the medal was a very limited edition presented to 560 members of Znanie.

We discussed the plans for exchange visits of scientists. I identified in a general way the four areas represented by the four U.S. scientists that we are inviting to participate, identifying only Melvin Calvin by name. I said that some of these probably couldn't come to the Soviet Union until early next year. Maslin identified the following six areas from which the four Soviet scientists would be chosen (they have not yet been notified of their selection): (1) sources and applications of energy, (2) Science and Technological Revolution, which they refer to as STR (Fishevsky may be their representative here), (3) use of natural resources, (4) astrophysics

Thursday, September 7, 1972 (con't)

and cosmology, (5) biophysics, and (6) biochemistry with emphasis on cancer. When they suggested that the U.S. send someone who could talk on cancer research, I said that Calvin fills this bill (as well as about three other fields). They want us to inform them as to the best actual dates for their visits; I said we want two to come in time for the late December AAAS meeting in Washington, and they indicated that Fishevsky would probably be one of these.

I told them about the AAAS Mexico City meeting scheduled for next June-July and this intrigued them very much. They would like to send some scientists to this meeting, and I suggested these should be in addition to the regular exchange of four per year. They would like us to send a formal invitation to Znanie which would also indicate the number being invited; they said that Artobolevskii would probably want to be included.

We then went on to discuss ways in which the implementation of the AAAS-Znanie Agreement could be expanded. One such way would be in the exchange of literature of the two societies. As background for this possibility, they identified the following publications of Znanie (with the indicated number of copies per year): (1) Science and Humanities (3,000,000), (2) Future of Science (few hundred thousand), (3) International Life (limited number of copies), (4) Science and Religion (more than 300,000), (5) Knowledge is Power (550,000), and (6) World of Lectures (140,000). These are all confined to the Russian language except International Life, which also appears in English and French. The magazine Knowledge is Power is directed toward young people. We should let them know which ones we want, the number of copies of each, and what we might send in return. As an example, they suggested they might send a number of copies of International Life and one each of the others.

They also publish 23 sets of booklets (12 per set) each year, in a popular vein, in various fields such as physics, chemistry, etc., with an average printing of 60,000 copies of each of these 276 booklets. The total output of the 2,500,000-member Znanie organization is about 100,000,000 issues (books, magazines, booklets, etc.) per year. They emphasized to me that they are in the process of tightening their bonds with the Soviet Academy of Sciences. I described Science News and said I would send them some copies.

As our meeting drew to a close, Sergei said he wanted to call attention to a practical problem, namely the mechanics of financing the individual exchange visits. They prefer that this be done on what they refer to as a "non-currency basis," i.e., essentially as is done in the scientist exchanges of the US and USSR Academies of Science. This means that the host country pays all expenses, including incidental expenses, during the stay of the visiting scientists and the country sending the scientists pays only the travel expenses between the two countries. I said I thought that this is consistent with our understanding and we will confirm this with them. Sergei mentioned that this was not done for one of the Soviet scientists visiting the U.S. (I got the impression this was a woman scientist visiting the U.S. at the time of the last AAAS annual meeting) and this worked some



hardship; apparently, mention was made by AAAS representatives at that time that we would pay this scientist's U.S. expenses when our funds become available. They emphasized that our scientists should be prepared to give some lectures of a popular nature.

In conclusion, they stressed that they hoped the AAAS-Znanie Exchange Agreement will be pursued vigorously. Maslin said that Valerii Popkov, Znanie Vice President for Foreign Relations, will push Goldanskii very hard to keep things moving. Maslin said that he and Goldanskii and the others involved are young and vigorous and anxious to get things moving. I said that such an attitude strikes a responsive note with me, that I am very interested in expanding AAAS relations with foreign scientific societies, and that, if I leave any impact in the AAAS as the result of my presidency and board chairmanship, I hope that it will be in this area.

I rode back to the Rossia Hotel with Pospeloff and had dinner in my suite, then we rode to the Bolshoi Theater where we joined the Spitsyns at some very fine seats down front. We saw the Nutcracker Ballet, featuring the premiere Soviet ballerina Katrina Maximova and male ballet dancer Vladimir Vasiliev. It was an exciting performance and was received by the audience with enthusiasm and great emotion.

During the intermission, Spitsyn spoke to me about the possibility of N. B. Mikheev coming to LBL next spring to work on the higher oxidation states of nobelium and lawrencium. I said late spring would be best. Spitsyn will write me. After the ballet, I rode back to the Hotel with the Spitsyns and Pospeloff.

Friday, September 8, 1972 - Moscow

I had breakfast in my suite, then rode to the Symposium (program attached) with Olga Polukarov. I learned that she is 22 years old, lives with her family in central Moscow, and her father is an officer in the Soviet Army.

The first talk, postponed from yesterday, was by G. Koch (of the Karlsruhe Laboratory) on "Solvent Extraction--Ion Exchange Process for the Recovery of Transplutonium Elements from Power Reactor Fuels." (Koch is the editor of the section on transuranium elements for Gmelin, for which I have contributed two articles.) He said that the German policy for the long-term storage of high level radioactive wastes from the nuclear power industry consists of storage in solution (liquid form) for five years, then conversion to solid borate-silicate form and long-term storage in this form. The transplutonium elements will be recovered at the end of five years, using the flow sheet which he described.

Next, G. V. Korpusov spoke on "Current Extraction Methods of the Transplutonium Elements Separation in Trivalent State." Then Baybarz gave the paper scheduled for yesterday for D. E. Ferguson (who didn't attend the Symposium as scheduled) and his co-author W. H. Hale (also not present) on "Separation of the Transuranium Elements by Ion Exchange." He showed excellent color slides of the HFIR, TRU, chemical separation equipment, etc. He showed many other beautiful color slides including a glowing 10 gm Cm-244 sample.

11. G. V. Korpusov, G. I. Kuznetsov, E. N. Patrusheva,  
*Iri* G. I. Popkov G. N. Yakovlev (USSR). Study  
of the Counter — Current Extraction Methods  
of the Transplutonium Elements Separation  
in Trivalent State. 15 min.

Discussion.

Friday, September 8. («Contd»)  
Morning Session, 9.30—14.00

Chairman I. K. Shvetsov

Co-chairman ~~D. E. Ferguson~~

A. Chesne

*Didn't  
come to  
Moscow*

12. G. J. Beyer, F. Molnar, W. Raiko, H. Tyrroff,  
E. Herrmann (Dubna). Contribution to the  
Preparation of Monoisotopic Actinide Prepara-  
tes. 20 min.
13. M. K. Chmutova, B. F. Myasoedov, N. E. Kochetova,  
B. Ya. Spivakov, Yu. A. Zolotov (USSR). Ext-  
raction of Transplutonium Elements by the Mix-  
tures of Reagents. 20 min.
14. A. M. Rozen, Z. I. Nikolotova, N. A. Kartashova, B. V.  
Martynov, L. A. Mamaev (USSR). Some Regu-  
larities in the Extraction of Actinide Elements.  
15 min.
15. A. I. Shafiev, Yu. V. Efremov (USSR). Separation of  
Actinides on ~~Zirconium~~ Phosphate. 15 min.  
15 min. coffee break.

V. THE PROBLEM OF TRANSURANIUM  
ELEMENTS IN THE LIGHT OF  
D. I. MENDELEEV'S PERIODIC LAW

Chairman G. T. Seaborg

Co-chairman V. N. Grebenchikova

1. G. T. Seaborg (USA). The Transuranium Elements  
and Mendeleev's Periodic Table. 20 min.

2. *V. I. Spitsyn (USSR)*. Problems of Actinide Valency in the Light of D. I. Mendeleev's Periodic Law. 20 min.
3. *An. N. Nesmeyanov (USSR)*. On the Position of Transuranium Elements in the D. I. Mendeleev's Periodic Table. 20 min.
4. *D. N. Trifonov (USSR)*. The Effect of Scouring of Periodicity and the Structure of the Seventh and Eighth Periods in the System of Elements. 15 min.

*Water* — 15 min. coffee break.

5. *R. A. Penneman, J. B. Mann (USA)*. «Calculational Chemistry» of the Superheavy Elements. 20 min.
6. *L. A. Chaikhorsky (USSR)*. On Some Regularities in the D. I. Mendeleev's Periodic Table and Chemical Properties of Transuranium Elements. 15 min.

**D i s c u s s i o n .**

CHANGES IN THE PROGRAM

241c

Friday, September 8. ("Contd")

Morning Session, 9.30-14.00

1. G. Koch, Z. Kolaric, H. Hang (GFR). Solvent Extraction-Ion Exchange Process for the Recovery of Transplutonium Elements from Power Reactor Fuels. 20 min.
2. G.V. Korpusov, G.I. Kuznetsov, E.N. Patrusheva, G.I. Popkov, G.N. Yakovlev (USSR). Study of the Counter-Current Extraction Methods of the Transplutonium Elements Separation in Trivalent State. 15 min.
3. D.E. Ferguson ~~W.H. Hale~~ (USA). Separation of the Transuranium Elements by Ion Exchange. 20 min.
4. G.J. Eyster, F. Molnar, W. Raiko, H. Tyrroff, B. Herrmann (Dubna). Contribution to the Preparation of Monoisotopic Actinide Preparates. 20 min.
5. M.K. Chmutova, B.F. Myasoedov, N.E. Kochetkova, B.Ya. Spivakov, Yu. A. Zolotov (USSR). Extraction of Transplutonium Elements by the Mixtures of Reagents. 20 min.
6. A.M. Rozen, Z.I. Nikolotova, N.A. Kartashova, B.V. Martynov, L.A. Mamaev (USSR). Some Regularities in the Extraction of Actinide Elements. 15 min.
- 15 min. coffee break
7. G.T. Seaborg (USA). The Transuranium Elements and Mendeleev's Periodic Table. 20 min.
8. V.I. Spitsyn (USSR). Problems of Actinide Valency in the Light of D.I. Mendeleev's Periodic Law. 20 min.
9. An.W. Mesmeyanov (USSR). On the Position of Transuranium Elements in the D.I. Mendeleev's Periodic Table. 20 min.
- 15 min. coffee break
10. J.T. Waber (USA). Ions in Solution and More about Mendeleev's Table. 20 min.
11. R.A. Penneman, J.B. Mann (USA). "Calculational Chemistry" of the

Superheavy Elements.

20 min. 241d

12. L.A. Chaikhorsky (USSR). On Some Regularities in the D.I. Mendeleev's Periodic Table and Chemical Properties of Transuranium Elements. 15 min.

Discussion.

Friday, September 8, 1972 (con't)

B. J. Beyer (from East Germany) of Dubna spoke next on "Contribution to the Preparation of Monoisotopic Actinide Preparates." They looked for transuranium elements produced from uranium irradiated with 76 Bev protons, using the isotope separator. They separated in the mass separator such isotopes as  $\text{Ac}^{225}$ ,  $\text{Th}^{234}$ ,  $\text{U}^{233}$ ,  $\text{Pu}^{239}$ ,  $\text{Cm}^{240}$ , and  $\text{Cf}^{246}$ . Next M. K. Chmutova spoke on separation of transplutonium elements, then A. M. Rozen on regularities of extraction of actinide elements.

After the coffee break, I served as chairman of session V, "The Problem of Transuranium Elements in the Light of D. I. Mendeleev's Periodic Law," with V. N. Grebenchikova (of the Radium Institute in Leningrad) as Co-Chairman. I gave my talk, "The Transuranium Elements and Mendeleev's Periodic Table." V. I. Spitsyn spoke next on "Problems of Actinide Valency in the Light of D. I. Mendeleev's Periodic Law." In a table he listed IV oxidation states for einsteinium and fermium. Next A. N. Nesmeyanov spoke "On the Position of Transuranium Elements in the D. I. Mendeleev's Periodic Table." He emphasized the similarity in electronic structures and similarities and differences in chemistry of Hf, Th, Ce and Ta, Pa, Pr and W, U, Nd.

At the coffee break, Tumanov gave me a packet of pictures he had taken of me; Spitsyn gave me another packet that his photographer had taken; and Naidionov and Timerbulatov gave me back the last galley proof pages that they had corrected (they will send me further corrections on these). A friend of Moise Haissinsky gave me a reprint of Haissinsky's article on the prediction of the chemical properties of elements 104-107.

Waber spoke next on "Ions in Solution and More about Mendeleev's Table." He gave an excellent explanation of spin-orbit splitting. Bob Penneman then spoke on "Computational Chemistry of the Superheavy Elements." He suggested element 104 might have a plus 2 state, not a plus 3 state, in addition to the plus 4 state. This was shown on an interesting slide. Element 119 might display valences greater than one. Finally, L. A. Chaikhorsky spoke "On Some Regularities in the D. I. Mendeleev's Periodic Table and Chemical Properties of Transuranium Elements."

After this I made some closing remarks. I summarized the Symposium, emphasizing the discussions of the physical and chemical properties of the transuranium elements, their numerous oxidation states (to which the Institute of Physical Chemistry has made notable contributions), the large-scale production in a number of countries, theoretical predictions and correlation with chemical properties, anticipated properties of superheavy elements, etc. I thanked Spitsyn and our hosts for their hospitality and thanked the translators for their fine work. After a round of applause for our hosts, I called on Spitsyn who also made some summarizing remarks, emphasizing the value of our getting acquainted with each other, then declared the Symposium closed.

I then rode with Spitsyn and Pospeloff to the building of the Soviet Academy of Sciences (14 Leninsky Prospect). Here we met from

Friday, September 8, 1972 (con't)

3:30-4:30 p.m. in Keldysh's office, as I did last year; this was the favorite room of the last of the czars, who used this building as his main place. Present were M. V. Keldysh, President of the Soviet Academy of Sciences; Academician G. K. Skryabin, Executive Scientific Secretary (having recently assumed this position); Academician M. A. Markov, academician-secretary; S. G. Korneyev, Chief of the Foreign Department; Peter A. Vares, Senior Advisor, Foreign Department; Spitsyn; and Pospeloff.

Keldysh said he is thinking about visiting the United States this fall, perhaps at the time of the fall National Academy of Sciences meeting in Washington in October. He will write Phil Handler about this. He couldn't come last year because he became ill at the time suggested for his visit. He said the US and USSR Academies of Science Agreement is going well in the field of accelerators and space, but needs to be expanded to encompass additional fields.

I told him about my discussion with the officials of Znanie yesterday. Reference to their huge publication program led Keldysh to tell me that the Soviet Academy of Sciences publishes more titles per year than any other publishing house. He also mentioned that the popular Soviet journal Science and Life (not published by the Academy) is very popular in the Soviet Union--some 2-3 million subscriptions. The copy of Man and Atom that I gave to him last year was on his desk. I told him this is being translated into Russian.

I told him about my visit with Arbatov at the Institute for U.S. Studies on Wednesday, and he stated with pride that this is a part of the Soviet Academy of Sciences. We agreed on the importance of making progress on arms limitation.

I described the activities of Science Service, explaining that I was serving as its President. I invited him to arrange to have the Soviet Union send some secondary students and their teachers to the Science Fair to be held in San Diego May 6-11, 1973. I described in some detail the nature of the student exhibits. Keldysh was very interested and said he will talk to the Minister of Education about this. Vares noted Sherburne's name, the address of Science Service, and the Fair dates. I also identified for them the sites selected for the Science Fairs in 1974, 1975, and 1976. They said they will correspond directly with Sherburne about this. I told them about Science News and said I would send Keldysh some copies.

As our meeting drew to a close, Keldysh invited me to attend the observance of the 50th anniversary of the Soviet Union to be held in Moscow at the end of November--this is being sponsored by the Soviet Academy of Sciences. He said his letter of invitation to me as an honorary foreign member of the Soviet Academy has already been sent to me at Berkeley.

I rode back to the Institute of Physical Chemistry with Spitsyn and Pospeloff, then on to the Hotel Rossia with Pospeloff. I prepared for the evening dinner to be given for the participants in the Symposium on the Chemistry of the Transuranium Elements and at 6:30

p.m. rode with Dr. and Mrs. Pospeloff to the Intourist Hotel where the dinner was held in the "Russian Hall." After a reception in a patio area, we went to dinner at a huge U-shaped table. There were about 100 people present, consisting of the foreign Symposium participants, the leading Soviet participants, the translators, and other Symposium workers and a number of wives.

I sat at the head table with the Spitsyns, B. P. Nikolskys, and R. Bergers (from France). M. A. Startsev, Deputy Director of the Institute of Physical Chemistry, was among those present. After an opening toast by Spitsyn, I responded with a toast in which I took special note of the charming Soviet lady chemists and other ladies present. There were numerous other toasts during the dinner, which lasted until 11:30 p.m., by people who were called upon by Spitsyn who acted as "Tamada." During the dinner, D. N. Sugulobov, of the Radium Institute at Leningrad, gave me a pin observing the 50th anniversary of the Institute.

After the dinner, I rode back to the Hotel with the Pospeloffs and retired well after midnight.

Saturday, September 9, 1972 - Moscow - Dubna

Maryashkin and Mikheev came by to pick me up at the Hotel a little after 7:00 a.m. and we rode to the railroad station and boarded the 7:59 a.m. train to Dubna. We arrived there shortly after 10:00 a.m., were met by Dr. Yu. Ts. Oganessian, and rode to the Laboratory of Nuclear Reactions with him. Here we met Dr. G. N. Flerov and went to his office, where we met with Dr. G. M. Ter-Akopyan, Alexandra Michael (Deputy Director of the Dubna Joint Institute for Nuclear Research [JINR], from Rumania, where I met him in 1969), Mr. E. M. Kolesov (International Department), Mr. Mikhaeil M. Lebedenko (Chief, Publishing Department, who had interviewed me during my 1969 visit to Dubna), L. V. Kulikova (interpreter), V. Z. Belov, and Dr. V. S. Barashenkov. Tea and cookies were served.

Flerov said I would hear about (1) the search for superheavy elements from the bombardment of uranium with xenon ions, (2) the search for superheavy elements in nature, and (3) the program to produce elements 106, 107, etc.

Oganessian described the first program much as he had earlier in the week. He related how the angle of the fission products from the superheavy element (produced from  $U + Xe$ ) will be measured by tracks in two intervening plastic sheets to correct the energy measured in the two Si-Au detectors in coincidence with neutron emission. He expected the S.F. energy to be 230 Mev if  $\nu = 10$  or 260 Mev if  $n = 2.5$  (as their other measurements seem to show). He showed me a Si-Au detector and a wheel containing the 20 carbon foils (25 micrograms per sq. cm.) used for stripping the Xe ions in the center of the 2-meter cyclotron. He gave me curves of  $Cf^{246}$  decay and alpha spectrum.

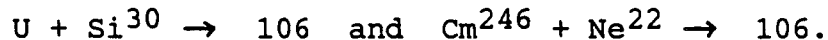
Ter-Akopyan then described their searches for superheavy elements in nature. They have used galena (lead ore) in three different setups: (1) 60 grams in a huge proportional counter to count S.F. events, (2) with a large plastic detector for S.F. tracks, and



Saturday, September 9, 1972 (con't)

(3) with a neutron counter using 30 Kg. in a salt mine in eastern Ukraine. The latter gives only about 2 neutrons per fission in connection with a very small positive effect. A small positive effect (equivalent to a half life of  $3 \times 10^{21}$  years) is found by the proportional counter method but this doesn't seem to be consistent with the results from the neutron counter. They also plan to look in geothermal water (containing lead) from southern USSR; they plan to put 100,000 tons of such water through one ton of Dowex-50 resin; they plan as a better method to treat the 100,000 tons with activated charcoal to absorb the lead and eka-lead. Flerov will go to Mongolia next month to hunt for a large meteorite which they can pulverize to analyze for superheavy elements by S.F. counting. He also plans to put large plastic sheets on orbiting earth satellites to look for S.F. tracks.

Flerov then described the work he is doing with V. A. Druin to try to produce elements just beyond element 105. They have tried Pu ( $P^{31}, 5n$ ) 107 with negative results. They plan to soon make a decision between



The latter should be better if Ghiorso is right (he said), but they hate to introduce  $Cm^{246}$  into their chemical laboratory. Before doing this, they will check the yield of  $Cm^{246} + O^{18} \rightarrow Ku$  using purely physical methods. If this yield is at least 10 times as high as  $Pu + Ne^{22} \rightarrow Ku$  as Ghiorso predicts, then they will risk the use of a  $Cm^{246}$  target to produce 106 and then will do  $Bk^{249} + Ne^{22} \rightarrow 107$ . They also plan to go back to accelerating Zn ions and have in mind such reactions as  $Am (Zn^{68}, Xn) 125$ .

Lebedenko asked me for my impressions about the Laboratory and future US-USSR collaboration (as he had during my 1969 visit) for use in the Lab publication. Following this, they took me into the room next to Flerov's office where the Si-Au detector-neutron coincidence counting apparatus is operating with the sulfide precipitate from U + Xe (the sample that gives one count per week). They showed me the pen traces of the S.F. counts and of the coincident neutron counts. Flerov keeps a close eye on this apparatus as the counts appear.

We next went to Zvara's chemical laboratory where Belov showed me the gas chromatography apparatus (which operates on line at the cyclotron) for the chemical separation of 104, 105, etc. They chlorinate the 104 recoils with  $SOCl_2$ , swept in by nitrogen gas, passing through a long tube (a meter or more long) into which mica sheets can be inserted at numerous places in tight-fitting slots.

Bernd Eichler (Dresden Nuclear Laboratory) showed me his charts of predictions concerning the volatility properties of the superheavy elements, especially 112-118, and his apparatus for volatilizing elements out of  $UO_2$ . He is bombarding U with protons and is volatilizing the spallation products, lower homologues of the superheavy elements, by heating  $UO_2$  in air. He predicts all the elements 112-118 should be volatile and that 112 may be a gas. The on-line gas

Saturday, September 9, 1972 (con't)

chromatography apparatus will not be used for the chemistry of the superheavy elements (1) because a different kind of chemistry is needed and (2) because they cannot use on-line apparatus with the Xe beam from the tandem cyclotron combination since they cannot extract the beam from the 2-meter cyclotron.

We then all went down to see the tandem cyclotron combination in the basement of the Laboratory of Nuclear Reactions. I saw first the 3-meter cyclotron. The long bombardment of uranium with Xe was in progress. They bombard continuously seven days a week with a 4-hour shutdown for maintenance. The 50 KW ion source burns out its cathode and anode every 24 hours and this takes 20 minutes to change; they showed me a supply on hand. Here I saw the pole pieces for the 4-meter cyclotron. Flerov said he will decide whether to shut down to install these after he learns the size of the Xe beam from the SuperHILAC. If the latter is substantially (say 10 times) higher than their present beam ( $3 \times 10^{10}$ ) they will shut down and install the 4-meter pole pieces--this will give a substantially larger beam in the tandem, but of course the installation will shut them down for some time. He said the funds for the installation have been allocated. (He said, wistfully, that he wished he hadn't spent so much time on element 104, but had gone on to try to make 106.)

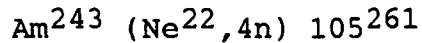
We then followed the connecting tube with its steering magnets to the 2-meter cyclotron. At a window in this tube I saw the Xe beam as it impinged on a scintillation screen placed in its path; the beam is several cm wide and a few mm high. We then went on to the 2-meter cyclotron where I saw the target insertion and carbon foil insertion apparatus.

We visited the mass separators (they have three). One of these will be used to look for superheavy elements mass lines in the sulfide precipitate of the present long U plus Xe bombardment. (The beam was earlier read by Flerov to be  $2 \times 10^{10}$  as we walked by the beam measuring meter.)

I discussed with Oganessian the question of lead impurity in the  $\text{Am}^{243}$  target used in the production of their 2-second  $105^{261}$ . I pointed out that the presence of lead might account for most, if not all, of their 8.9 Mev alpha particles as due to  $\text{Po}^{211m}$ . Therefore, their 9.1 Mev alpha particles might be due to  $\text{At}^{213}$ , a daughter of the 2-second  $\text{Pa}^{225}$  produced by the reaction of  $\text{Ne}^{22}$  with the lead impurity. Oganessian, and Flerov (who joined the conversation), conceded that this presents a problem and both said their claim to the discovery of element 105 rests mainly on their observation of the 2-second S.F. activity. They determined the amount of lead impurity in each of their  $\text{Am}^{243}$  targets by bombarding with C ions to produce Po activities. They purify and repurify the  $\text{Am}^{243}$  target material, with special chemical separations from lead, but, nevertheless, these targets often contained as much as 0.1 microgram of lead. The  $\text{Am}^{243}$  target which was used to observe the 2-second 8.9 and 9.1 Mev alpha particles from  $\text{Am}^{243}$  plus  $\text{Ne}^{22}$  contained only 0.01 microgram of lead. They are puzzled as to how Ghiorso obtains targets free of lead (if he does) because there is much shielding lead around the HILAC target

Saturday, September 9, 1972 (con't)

area (as Oganessian has observed personally). They feel very confident of the 2-second 105 S.F. activity:



Its excitation function corresponds to a  $\text{Ne}^{22}, 4n$  or  $\text{Ne}^{22}, 5n$  compound nucleus reaction as shown by direct comparison with the excitation function for the production of  $102^{252}$  S.F. activity from  $\text{U}^{235}$  plus  $\text{Ne}^{22}$ . They get as much as 100 S.F. events per experiment (probably means long bombardment, however). They rule out a S.F. isomer of a lighter element on the basis of the excitation function but also, chiefly, because the 2-second S.F. activity is not produced from  $\text{Am}^{241}$  plus  $\text{Ne}^{22}$ . They estimate 20% S.F. branching, using Berkeley cross section for production of alpha emitting 2-second 105. They feel that S.F. half-lives are turning up again after 104 and 105 and that the S.F. half-lives of 106, 107, etc. will go up as the closed shell region is approached. They believe the higher S.F. barriers in the closed shell region will lead to larger (than the 104 and 105 region) cross section for the production of these elements by heavy ion bombardments. They are not worried about increased nuclear viscosity reducing the yields because they believe they know that in the fusion-fission process, the initial compound nuclei are formed; their yield (from  $\text{U} + \text{Xe}$ ) seems to be reduced to a vanishing point around  $\text{Fm}$  (they have now observed 4 counts of  $\text{Fm}^{253}$  from  $\text{U} + \text{Xe}$ ) due, they believe, entirely to the decreasing fission barrier as the  $\text{Fm}$  region is approached. The increasing fission barriers, as the closed shell region is approached, will reverse this effect of removal of the heavy product nucleus by "second" fission. Nuclear viscosity plays no role in this "second" fission process. Thus they feel if they fail to observe nuclei the Island of Stability does not exist.

Flerov spoke several times about increased cooperation with Berkeley and presumably he would like some initiative on our part in this direction. The visit of Flerov and Oganessian to LBL next March-April should, of course, be a move in this direction.

During my tour I saw the large building where the "Smoketron" will be built. I also met V. P. Sarantsev, the designer and builder of this accelerator. I joked with them about the "gamble" they are taking in counting on this as their ultimate source of heavy ions. Flerov is organizing a symposium on the Smoketron for Dubna and hopes that Denis Keefe or Andrew Sessler can come. Realizing our shortage of foreign travel funds, he said he would be glad to pay travel expenses from New York and return. The first stage of the Smoketron (costing \$1,500,000 rubles) will accelerate all ions (i.e., including U ions) to energies of 10 Mev per nucleon and intensities of  $10^{11}$  per pulse--with 50 pulses per second, this means intensities of  $10^{13}$  per second. With the addition of later stages they hope to achieve 1 Bev per nucleon. Apparently it is a characteristic of the Smoketron that the intensities of the beam are the same for all ions up to U.

We then walked to the Dubna Hotel where a group consisting of Flerov, Oganessian, Michael (as host), Kulikova, Kolesov, Tumanov, Mikheev, Maryashkin, and I had lunch (a large meal) in the special

room (the same one where we had lunch with Petrosyants as host in 1969). At lunch Flerov told me about a review article he is writing on elements 102 and 104 and asked me to invite Ghiorso to send any information he would like included. He spoke of the coming time when UNILAC will make both the SuperHILAC and Dubna Tandem Cyclotron obsolete and suggested we should increase our cooperation.

Tumanov took a number of pictures throughout my visit. We then all took a walk along the Volga River and visited the huge swimming pool named "Archimedes" (where the Director presented me with a pin). As we were leaving, Flerov presented me with a book of pictures of old Russian tiles for Helen and Oganesyán presented me with a Dmitri Shostakovich XI Symphonie "1905" record.

Mikheev, Maryashkin and I rode back to Moscow by car, leaving shortly after 4:30 p.m. and arriving at the Hotel Rossia shortly before 7:00 p.m. On the way, Mikheev again discussed his proposed visit to LBL next year to work on the +1 state of mendelevium and possibly also of nobelium. I said he would need to stay four months to assure himself of SuperHILAC time and he shouldn't come before next June. He asked if he should bring an assistant or would someone at LBL be available to help, and I said I would let him know about this and about the best time to come.

I had dinner in my suite.

Sunday, September 10, 1972 - Moscow - Stockholm

I had breakfast in my suite. Pospeloff and Mikheev came by at 9:00 a.m., rode with me to the Sheremet'ev Airport (No. 1) and helped me with the complicated exit process. Mikheev gave me a copy of "Bolshoi Ballet Notes," 2nd edition. He asked me to try to arrange with the Pergamon Company the publication of the English version of the Symposium on the Chemistry of the Transuranium Elements, and I said I would contact J. J. Katz to help arrange this. He said that Flerov called him this morning to wish me bon voyage and to express again the hope for increased cooperation between Berkeley and Dubna. I bought a number of Soviet lapel pins, stamp collections, etc. at the airport to use as gifts when I return home. The weather in Moscow was very pleasant during my entire stay.

I boarded Aeroflot Flight No. 217 which left Moscow at 11:15 a.m. and arrived in Stockholm (Arlanda Airport) at 11:10 a.m. I was met by Bo Aler and Sten Sandström and we rode in Aler's official car to the Grand Hotel. I checked into room 227. Aler has placed his official car (a Mercedes) and his driver, Ingemar Peterson, at my disposal during my stay in Sweden.

I had a bite to eat, then walked the bridge across Malaren to Slottet (the Castle) where I arrived just in time, at 1:30 p.m., to see a ceremony, watched by a large crowd, which may have been the changing of the guard. A group of white-capped guards marched out to the playing of music by a band and another group remained in the patio where the ceremony occurred. I then went into Slottet and bought some picture postcards, returned to the Grand Hotel, and from there rode with Ingemar Peterson to Skansen Park.

Here I met at Laxbrostugan with 32 of my relatives and their in-laws, both here and at the lunch. Present were: Maja Lindås; Gunhild Lindås; Eric and Tora Bäcklin; Karl and Jenny Adolfsson; Olaf and Eivor Bloom and their children Per (25), Berit (19), and Anders (13); Ulla Karlström (Per's girl friend); Sven and Ulla-Britt (Bäcklin) Österberg and their children Eva (14) and Karin (11); Sven and Karin Lindås; Gustav (Albert's son) and Inga-Britt Eriksson; Albert and Maria Eriksson; Gösta and Irene Adolfsson and their daughter Lena (11); Bengt and Britta Adolfsson; Gun Grill and her children Helen (7) and Jimmy (12); Jan-Erik and Anita (Bloom) Gustafsson and their son Peter (1). Ingemar Peterson also attended.

Gunhild Lindås (who was attending one of our Skansen reunions for the first time) told me that she helped trace the family genealogy that led to our connection with Laxbrostugan. She thinks we are descended from Mickael Hindersson and his first wife, Anna Lybecker, and not Maria van Gent (his second wife), the name listed on the wall with that of Mickael Hindersson. (I think she is mistaken.)

I took movies and color photos of the relatives, some in front of Laxbrostugan. We visited inside the house as well as outside from 2:30-4:15 p.m., then walked to Solliden Restaurant where we had sandwiches and tea in an upstairs private dining room. A photographer from Dagens Nyheter took some pictures and a reporter interviewed me about my relatives. I distributed some presents that Helen had bought for the relatives, especially the children. Albert Eriksson gave me a copy of his 80th birthday picture (March 19, 1972). Maja and Gunhild Lindås came in native Swedish costumes (dresses). Olaf Bloom suggested our next reunion be at the Sven Lindås home at Stora-Skedvi (at Sven's invitation). The weather at Skansen was very pleasant.

After the reunion, I rode back to the Grand Hotel with Peterson. I took a walk in downtown Stockholm during the evening.

#### Monday, September 11, 1972 - Stockholm - Nyköping

I had a buffet breakfast in the Hotel veranda dining room, then rode with Peterson to the Nobel House (Sturegatan 14). Here I met with Sam Nilsson (Executive Secretary, International Federation of Institutes for Advanced Study) in his fifth-floor office. I met his wife, Monica--they live in an apartment (formerly Nils Ståhle's) on the same floor. I talked by phone with Nils Ståhle, who was visiting in Malmö, to exchange some words of greeting. I agreed with Nilsson to exchange informal correspondence concerning my knowledge of foreign societies and institutes, etc. that might be relevant to the International Federation.

I then rode back to the Grand Hotel with Peterson, where I met Bo Aler. I checked out and rode with Aler to Tullgarn Kungl. Slott (Tullgarn Royal Castle) to have lunch at Tullgarn's Vårdshus. After a tour of the castle with Aler and Sten Sandström, we had lunch with Mr. Ragnar Nilson (Vice President, Swedish Atomic Energy Co.), Mr. Lars-Åke Nöjd (Vice President) and Dr. Rolf Pauli.

After lunch, I rode to the Studsvik Laboratory (Aktiebolaget Atomenergi) near Nyköping. I made a tour of the Lab with Aler



Laxbrostugan, Skansen, Sweden, 9/10/72: Gösta, Lena, & Irene Adolfsson, Bengt & Britta Adolfsson (back), Jenny & Karl Adolfsson (front), GTS.



Laxbrostugan, 9/10/72, including: Helen, Jimmy & Gun Grill, Anders, Berit, Eivor & Olaf Bloom, Peter & Anita Gustafson, Tora & Erik Bäcklin, Maja, Sven, Karin & Gunhild Lindas, Inga-Britt, Gustav, Maria & Albert Eriksson, Sven Österberg, Ulla Karlström, Per Bloom, GTS.

Monday, September 11, 1972 (con't)

(accompanied by Pauli much of the time). We visited the Materials Testing Reactor R2 (which I also visited during my visit in 1962) where I was briefed by Mr. Kristian Saltvedt (in charge of R2), Mr. Hilding Mogard, and Dr. Pauli. This is much like the ORR at ORNL, operates at 50 MW with a maximum neutron flux of  $0.7 \times 10^{14}$ . I saw the instrumentation around the reactor for various neutron measurements, including UFO-1 (named for Unidentified Flying Objects), a type of flight neutron spectrometer.

Next we went to OSIRIS (On-line Separator Isotopes Reactor in Studsvik) which was described by Professor Gösta Rudstam (who worked with us in the Radiation Laboratory in 1950). I saw the line neutron spectra (similar to those seen at Mainz University on September 2). The apparatus for these measurements was developed by Shlomo Shalev (of Technion University in Israel), who was also present here as a long-term visitor.

I then had tea and cookies with Aler, Pauli, Rudstam, and Shalev. The tour continued with a visit to the Pressurized High Temperature Critical Facility, KRITZ, which was described by Dr. Erik A. Johansson. We then went to see the Concrete Pressure Vessel Model, BTM, a 1/33 scale model of a Prestressed Concrete Reactor Vessel, PCRV, which I was shown by Peter Margen and Shankar Menon. The Swedish pressurized water reactors, which are built and sold by ASEA in a 50% ownership arrangement with the Swedish Government, may be equipped with PCRV's instead of steel pressure vessels, but the choice between these two possibilities has not yet been made. I next toured the Laboratory for Chemistry and Corrosion, where I was briefed by Dr. Walter Hübner.

We then went to the Administration Building, where I was briefed by Dr. Lars Carlbom and Mr. Göran Thorén on the Swedish Environmental Control and Safety Research Program. They have a study under way to decide how close to cities power reactors can be situated to be completed, with recommendations, in about six months. They plan to have their power reactors, at least some of them, furnish steam as well as electricity, which they find can be done economically with the reactor situated up to 20 kilometers from the point of steam usage.

I called LBL at 4:45 p.m. and talked to Sheila about my schedule and to Al Ghiorso about the nature of the GSI-LBL Agreement that I might discuss with Schmelzer and Herrmann on Wednesday. I then called Schmelzer at GSI to arrange for my visit there.

I had dinner at Nyköpingshus. Present at the dinner were: Landshövding Mats Lemne, Direktör Bo Aler, Direktör Ragnar Nilson, Direktör Lars-Åke Nöjd, Fil lic Lars Carlbom, Överingenjör Peter Margen, Civilingenjör C-G Österlundh, Docent Tor Wiedling, Docent Evelyn Sokolowski, Professor Gösta Rudstam, Docent Rolf Pauli, Docent Göran Carleson, and Civilingenjör Sten Sandström.

Aler gave the traditional Swedish toast at the beginning of the dinner and I responded near the end. I spoke of my Swedish parentage, childhood in a Swedish neighborhood in a mining town in Michigan, my

many visits to Sweden, my visits with many relatives on this trip, my interesting visit to the Studsvik Laboratory, and thanked Aler for his hospitality and his gifts to me.

Nyköpingshus is an old refurbished castle, that used to house Swedish royalty, now has restaurant facilities and a museum. We ate in a long room, with a semicircular ceiling, made of brick, dating to the 14th century or earlier. The room in which we ate is called Gästabudssalen and is famous because it was in this room, in 1317, that a Swedish king entertained his three brothers at dinner, then, after a full meal of food and drink, threw them into a dungeon, locked the door and threw the key into the river. The three brothers died of starvation, thus removing them as possible competitors to his throne. The dungeon is still there to be seen by visitors. Excavation has uncovered many valuable relics including a number of drinking glasses of unique design. They bear the insignia "C and M," standing for "Carl and Maria." This Carl was a Duke related to King Carl IX who was the father of Gustavus Adolphus. The glass factory that manufactured these glasses began operating about 1584. Such glasses are being manufactured today and Aler, during his opening toast, presented me with a set--a decanter and six glasses of one of the designs.

After dinner, over coffee, there was much discussion of Swedish politics, etc., led by Mats Lemne. I rode back to the Studsvik Hotel with Nilson, where I spent the night in suite 218-219.

Tuesday, September 12, 1972 - Nyköping - Eskilstuna - Kopparberg

I had breakfast in the hotel restaurant (cafeteria style) with Nilson. Aler joined us for a cup of coffee.

I gave the annual Studsvik Lecture, "Status Report on the Transuranium Elements," illustrated with 45 slides. I was introduced by Aler shortly after 10:00 a.m. and talked for an hour-and-a-quarter, followed by about 20 minutes of questions. Among those present were Olaf and Eivor Bloom, Jan Rydberg (who worked in our nuclear chemistry group in Berkeley in 1948), Lennart Holm (with us in Berkeley in 1956), Gösta Rudstam (with us in 1950), Wilhelm Forsling, Erik Rudberg (Permanent Secretary of the Swedish Royal Academy of Sciences), O. Gimstedt (President of Oskarshamnsverkets Kraftgrupp, with whom I signed the first U.S. agreement with a foreign user for U.S. toll enrichment services in my capacity as USAEC Chairman in Washington some five years ago), and the others who attended the later luncheon in my honor.

After my lecture we went to the Studsvik Hotel for the luncheon. Pictures were taken of me with Rudstam, Rydberg, Holm, and Forsling. Present at the luncheon were Dr. Tibell, University of Uppsala; Olaf and Eivor Bloom; Dr. Henri Conde, Research Institute of National Defense; Mr. Göran Ekberg, President, South Swedish Power Co., Ltd.; Prof. Wilhelm Forsling, Research Institute of Nuclear Physics; Mr. O. Gimstedt; Mr. Lennart Holm, Research Institute of National Defense; Mr. Alf Larsson, Ministry of Industry; Prof. Börje Larsson, Gustav Werner Institute; Dr. M. O. Ottosson, Swedish Atomic Research Council; Prof. Erik Rudberg, Royal Academy of Sciences; Prof. Gösta Rudstam, Swedish Research Council's Laboratory; Prof. Jan Rydberg and



Tuesday, September 12, 1972 (con't)

Prof. Nils Ryde of Chalmers Institute of Technology; Dr. Bengt Samuelsson, Swedish Natural Sciences Research Council; Dr. Håkan Sterky, Stockholm; and from AB Atomenergi, Dr. Bo Aler, President; Mr. Ragnar Nilson, Vice President; Mr. Lars-Åke Nöjd, Vice President; Dr. Lars Carlbom, Head, Safety and Operations Department; Mr. Lennart Devell, Safety and Operations Department; and Mr. C-G Österlundh, Head, Materials and Fuels Department.

Aler gave an opening toast of welcome and just before coffee, I responded with thanks and some remarks about my Swedish background, many visits to Sweden, visit to the Studsvik Laboratory, visits with my relatives during this trip, Helen's regret at not being able to accompany me, feelings about my life in Washington, and return to Berkeley, etc.

Börje Larsson, a protege of Cornelius Tobias, told me about a conference on biological application of high energy heavy ions (Bevalac type) to be held in Uppsala next spring--he will write to invite Berkeley representatives. Rudberg invited me to the regularly scheduled meeting of the Swedish Academy of Sciences to be held at the Academy tomorrow night; he said that Carl Gustav Bernhard will replace him (upon his retirement) as Permanent Secretary of the Royal Academy on January 1, 1973. Ekberg told me he has replaced Vetterlund (whom I met when I was USAEC Chairman) as President of the South Swedish Power Co., Ltd. Rudstam holds the rank of Professor and is Head of the Studsvik Laboratory of the Swedish National Research Council. Rydberg invited me to visit the University of Gothenberg on my next visit to Sweden, and Gimstedt and Ekberg invited me to visit their establishments. Olaf Bloom gave me some newspaper clippings, a picture of their summer place, and a map of Skansen.

At 2:00 p.m. I left, in Aler's car with Peterson as driver, on my visit to my relatives in various parts of central Sweden. Our first stop was Eskilstuna where we arrived at 3:30 p.m. We visited for a little more than an hour at the home of Gösta and Irene Adolfsson (Gösta is my first cousin) at Guldsmesvagen 14. Present were Gösta and Irene and their daughters Lena and Eva, and Bengt and Britta Adolfsson (Bengt is Gösta's brother), who live nearby. Bengt works for the same railway company as Gösta (the company for which their father Karl also worked). We took a number of pictures and had sandwiches and tea. Gösta and Irene live in a new little three-bedroom house that they moved into last November. I gave them some little presents (stockings) that Helen had bought for them. This was a very enjoyable visit. The weather during the drive and at Eskilstuna was perfect. We tried to reach Ruth Kjellgren (another first cousin), who also lives here, but she wasn't home.

I then continued in the car with Peterson and drove to Kopparberg, to the apartment (Kyrkvagen 4A) of Karl and Jenny Adolfsson. Here I had dinner (Swedish meatballs, lingonberries, etc.) with Karl and Jenny, joined by Per, Karin, and Göran Moller. Karin is Karl and Jenny's daughter, my first cousin, and Göran is Karin and Per's 19-year-old son. We spent the evening looking through photo albums, especially the one covering the 1959 trip of Karl and Jenny to the

United States; this is an exceptionally well-put-together history, including postcards and other commercial pictures, train and boat ticket stubs, in addition to many personal photos.

I spent the night in the Adolfsson apartment, and Karin stayed in a neighboring apartment, while Per and Göran drove back to their home in Borlänge. Jenny gave me a bottle of lingonberries and a bottle of sil. She also gave me seven fancy pieces of white lace-work for Helen to sew together into a "star"--six pieces surrounding the center piece. Karin gave me an iron "Berglagstroll" made from Grangesberg iron in Kopparberg for Dianne. She also gave me a color picture full of relatives, taken at Albert Eriksson's 80th birthday party and one of the Forssling family. I gave Karl and Jenny some stockings that Helen had bought for them.

As family history, I learned that mother's (and Karl's) father remarried in 1903 following my grandmother's death in 1901. Their brother Henning drowned on October 13, 1903 at the age of 11. Karl (born 1896) and Jenny (1900) were married in 1920 and lived until 1929 in Grangesberg, where Karin (1921), Bengt (1923), and Gösta (1926) were born, then moved to Kopparberg. They seemed to be in fairly good health. Karl lost the sight in his right eye in 1966 and uses eye drops to treat it.

Wednesday, September 13, 1972 - Kopparberg - Stockholm

Karl showed me a number of family genealogical charts which had more information than I have and which include a complete tracing of the descendants of Mickael Hindersson--the branch that kept continuous occupation of Laxbrostugan until it was moved to Skansen around the turn of the century; included also is a narrative history of Laxbrostugan. He gave me some of these papers which I am to xerox and return to him. I took some snapshots and movies of Karl and Jenny at their apartment and at the site of Laxbrostugan.

Karl and Jenny (with Karin) took me to the nearby site of Laxbrostugan. We saw the spot where the house stood from the middle 1600's until it was moved. There are a number of other houses surrounding the site now. Mickael Hindersson had extensive holdings of property at this site and throughout Kopparberg.

We then rode with Peterson from Kopparberg to Grangesberg (Örntorp) to the home where mother lived with her family from 1900 to 1904. The house was built in 1900 to replace the smaller house where my mother (and her sisters and brothers) were born, and my mother moved to America in 1904. The property, house and land (about 1350 square meters) was sold by Karl in January 1959 for 13,000 Kroner. Karl estimates it is worth today about 35,000-50,000 Kroner (\$7,000-\$10,000). We went inside the house (as I had done with mother during our visit in 1957) and met the present occupant Margit Schröder (her husband, Elis, was not at home). I took snapshots and movies.

We drove by the artificial lake (Janmatsdamm) where Henning drowned and the building in old Grangesberg that housed the Konditori (Restaurant) where mother worked just before she moved to America. It was here that uncle Hedstrom met her, during his visit back to Sweden

Wednesday, September 13, 1972 (con't)

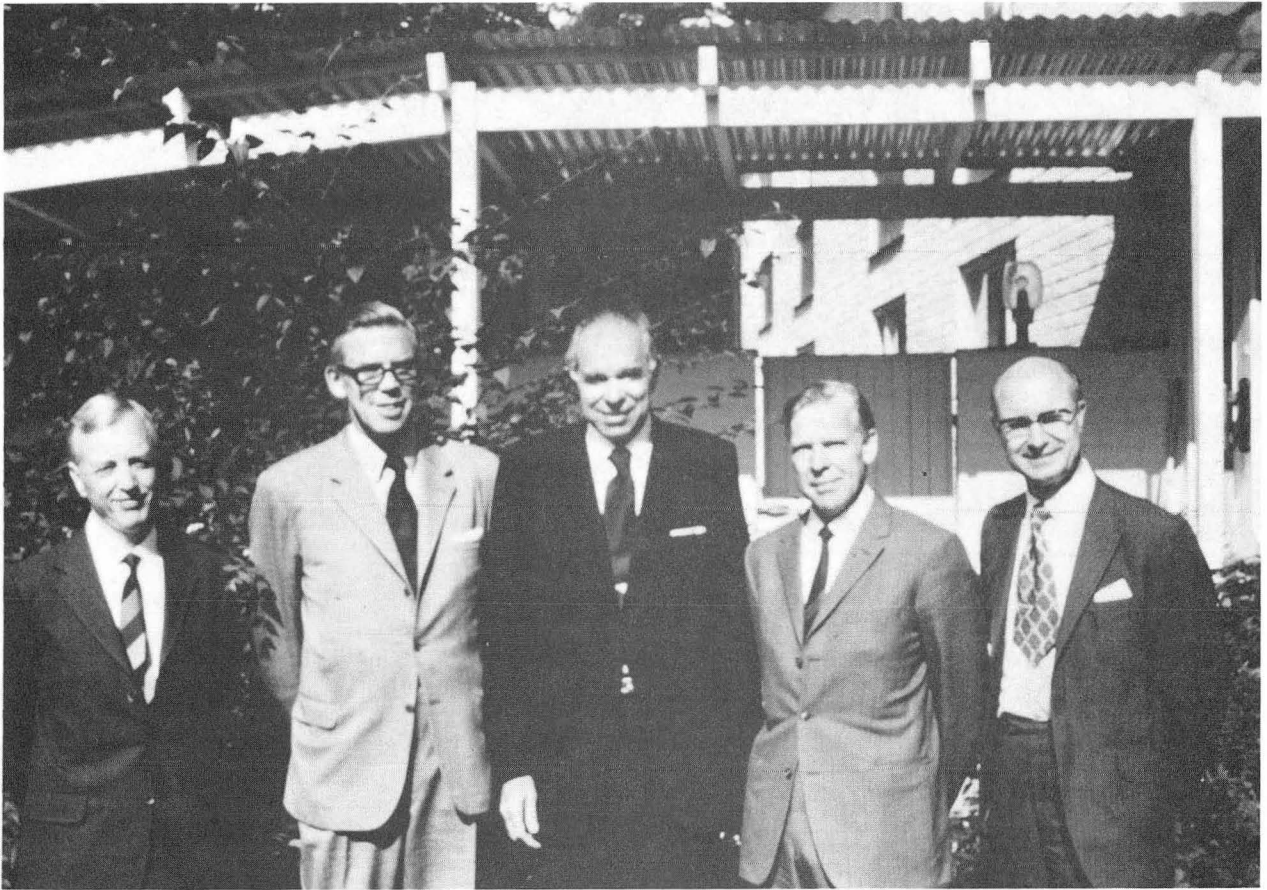
from Ishpeming, and asked if she wanted to go with him when he returned. She was delighted to do this and obtained from her father some of her inheritance money, from her mother's death, and used this to buy the ticket. She was anxious to get away from her stepmother. Her sister Hilda followed in a couple years, then her brother Oscar a couple of years after that. We said goodbye to Karl and Jenny here and they rode back to Kopparberg by train.

Karin and I then rode with Peterson to Borlänge. We stopped for a visit with Per at the huge shop where he works as a manager--they manufacture ventilating equipment, furnaces, etc. We rode on to Karin and Per's home where I took some movies.

Karin and I then continued on to the home of the Lindås in nearby Stora Skedvi. This is the place that mother and I visited in 1957, situated on Dal Alven (Dalarna River) in a beautiful setting. They still raise hogs, as they did in 1957, and apparently farm for a living. Here we had lunch in the newer of their two old houses with Mr. and Mrs. Sven Lindås, their attractive 19-year-old daughter Gunvor, Maja Lindås, and Sven and Maja's brother Nils, all of whom live there. The Sven Lindås have two other children (not present), Lars (25) and Kerstin (22); Kerstin is attending some kind of school in Vasterås. Gunvor showed very great interest when I suggested she visit us in California sometime. She gave me a present of a little Dalahest (wooden Dalarna Horse). We took snapshots and movies of the group. The elder Lindås are grandchildren of a sister of my mother's father. A sister of Lindås's father has a 75-year-old son, Josef Wallin living in Florida and they have a son, Bertil Wallin, who apparently is with the Air Force and lives in Japan.

Karin and I then proceeded to the home of Mr. and Mrs. Albert Eriksson and sons at Erikslund, also in Stora Skedvi (just across Dal Alven, which we crossed by car ferry boat). Here we had coffee, tea, cookies, cake, etc. We took photos and movies of the group. We met with Albert and Maria Eriksson; their grown sons Göran, Stig and Karl-Erik, who live with their parents; son Bengt, his wife Marta, and cute daughters Kristina (8) and Marit (5); son Gustav and his son Per-Erik (12). Göran, Stig, Bengt, and Gustav own and operate an iron-ware manufacturing shop in Säter and apparently are doing very well. Karl-Erik is a helper in an archeological research program, much of which is centered right on the Eriksson property. He gave me a reprint of an article by Ake Hyenstrand, for whom he works, entitled "Dan enkla Skafthålsyxan son arbetsredskap" of Nord Svensk Forntid, Skytteanska Samfundets Handlingar 6. They have found Viking artifacts (iron) and graves on Erikslund. Apparently there was a Viking Iron Works here. He gave me pieces of furnace material, iron and iron ore of date 700 A.D. (as determined by carbon-14 dating).

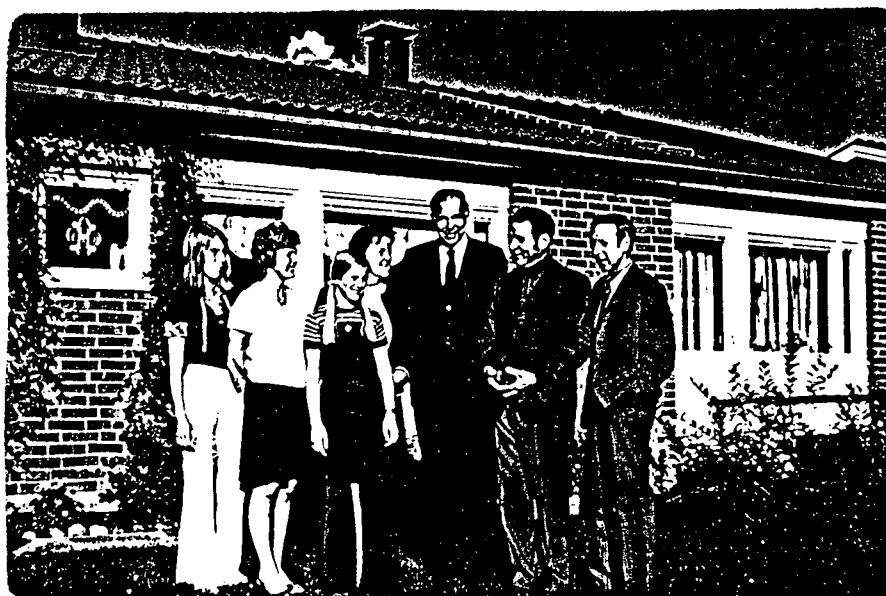
Albert gave me a framed picture, taken on his 80th birthday, of him and Maria, with children Gustav, Stig, Dan (a grandson), Göran, Karl-Erik, Bengt, Lena (not present; I met her as a young girl in 1957), Anna-Lisa, and Ulla (married name Lindgren). Ulla Lindgren and her husband own and operate "Hotell Gästes" in Funäsdalen (northern Dalarna) and they gave me a brochure describing this resort. This is



At Studsvik Hotel, September 12, 1972: Jan Rydberg, Lennart Holm, GTS,  
Gösta Rudstam, Wilhelm Forsling.



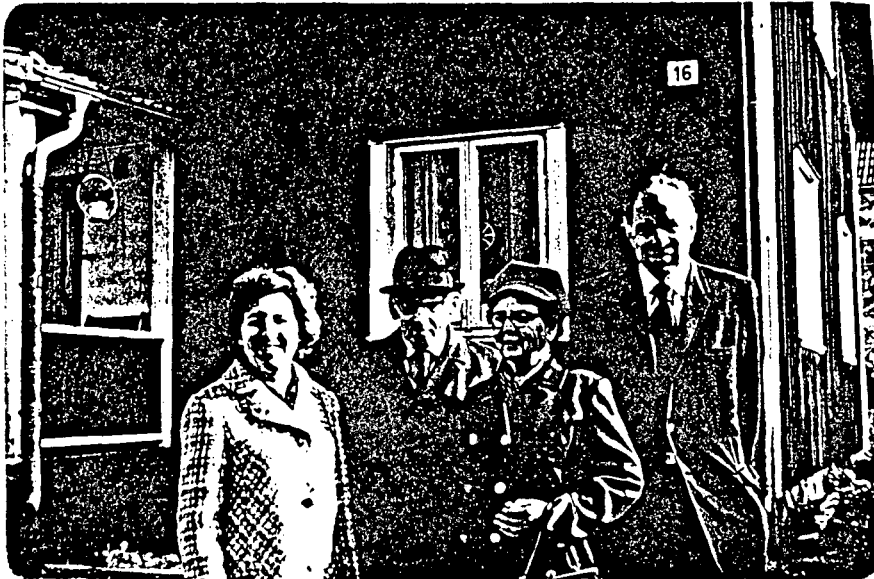
Studsvik Laboratory, Sweden, 9/12/72:  
Bo Aler, GTS.



At the home of Gösta and Irene Adolfsson, Eskilstuna, 9/12/72: Eva, Irene, Lena, Britta Adolfsson, GTS, Bengt Adolfsson, Gösta.



Site of Laxbrostugan, 9/13/72: Jenny & Karl Adolfsson with GTS.



Orntorp [Grangesberg], 9/13/72: Karin Moller, Karl & Jenny Adolfsson, GTS.



Lindas home, Stora Skedvi, 9/13/72: Gunvor Lindas, Karin & Sven Lindas, Maja Lindas, GTS, Karin Moller, Nils Lindas.



Albert Eriksson home, Stora Skedvi, 9/13/72: Bengt, Marta & Marit Eriksson, Karin Moller, Göran Eriksson, ? , Per-Erik Eriksson, GTS, Kristina, Stig Eriksson, Karl-Erik Eriksson, Albert and Maria Eriksson, Gustav Eriksson.

Wednesday, September 13, 1972 (con't)

a remarkable family and they were extraordinarily pleased to see me. Per-Erik seemed to be an unusually bright boy.

When I left the Erikssons home, I said goodbye to Karin. I rode with Peterson, following Gustav and Per-Erik to the home in Yttre Heden, Säter of Anna Anderson, daughter of a brother or sister of my mother's father (i.e., a first cousin of my mother). She will be 84 years old in December, is somewhat feeble but has a remarkably clear mind. We talked about my mother and other relatives in the United States. Also with us was Hilding Carlsson (about 55), who lives nearby, the son of Jenny, an older (recently deceased, 1969) sister of Anna. We took photos and movies. Here I also met Gustav Eriksson's daughter Anna Karin (9 years old). Her family lives nearby. The weather was very pleasant during all of these visits.

My Studsvik Lecture of yesterday was covered rather thoroughly in an article by Arne Karsberg in today's Dagens Nyheter--the article featured the controversy over the naming of elements 104 and 105 between U.S. and Soviet scientists.

I rode back to Stockholm with Peterson to the building of the Royal Swedish Academy of Sciences (Roslagsvägen, Frescati district) to attend the semi-monthly meeting of the Academy in their historic meeting room. After the business meeting (agenda attached), presided over by Academy President Carl Gustaf Bernhard, covering Nobel and Academy matters, there was a talk by Sterky, "Telekommunikatun i Nutid och Framtid," illustrated with slides. He spoke from the same lectern as I when I spoke to the Academy in October 1949. After the talk, we walked to a nearby building to partake of the traditional post-meeting supper. (This supper was held in the same main building [second floor] as the Academy meeting in 1949, but custom has changed in the meantime (some twenty years ago).

Each Academy member (and so at least some of the guests) is given a silver "Jeton" (a sort of coin labelled "Kungl. Vetenskaps Akademien" and "För Efterkommande") and which is redeemable, if desired, for about seven Swedish crowns. I of course kept mine, which I received in my role as a Foreign Member of the Academy, as a souvenir.

Among the people I talked to during the evening were Erik Rudberg, Carl Gustaf Bernhard, Stig Claesson (whom I knew during his sabbatical stay at Berkeley in 1947), Gunnar Hägg (outstanding inorganic chemist whom I have long known), Carl Gustav Wahlquist (a guest, non-scientist, head of Stockholm Port Authority and whom I met during the 1962 Prayer Breakfast in Washington at which President Kennedy spoke), Olaf Tandberg (head of International Affairs for the Academy), Crawford (Swedish Ambassador to Kenya, a guest, home on leave), and Arne Fredga (chairman of the Committee for the Nobel Chemistry Prize).

I had a long talk with Rudberg. In discussing the suit by Piccioni against Segre and Chamberlain, he said he knew of no complaints, at the time, lodged against the awarding of the 1959 Nobel Prize to them. He was Chairman of the Physics Committee, having



Kungl Vetenskapsakademien håller ORDINARIE sammankomst i sessionssalen  
Frescati

ONSDAGEN DEN 13 SEPTEMBER 1972

omedelbart efter sammankomsten för nobelärenden som börjar kl 18.00

Ärende	Åtgärd
1. Val av två granskningsmän	
2. Tillkännagivande att utländske ledamoten av tionde klassen, herr Linnik avlidit den 30 juni 1972 <i>Ämälka (int. G. meddelad. § 29) om ledigblivna rum i klasserna 4 och 9.</i>	
3. KVA-INFORMATION 1972/11	
4. Remiss; "Utnyttjande och skydd av havet" (SOU 1972: 43)	
5. Hemställan av preses att bli befriad från uppdraget från den 1 januari 1973	
6. Förslag om val av en utländsk ledamot i femte klassen	
7. Val av en ledamot i redaktionrådet för AMBIO	
8. Val av ledamöter i kommittén för akademiens stora pris	
9. Fastställelse av stat 1972/73 för forskningsstationerna i Övre Norrland	
10. Förslag om utdelning av Berzeliusmedaljen i guld	

Ärende	Åtgärd
11. Förslag om utdelning av guldmedalj från Rolf Sieverts strålskyddsfond	
12. Ev orienteringar	

FÖREDRAG

Herr Sterky "Telekommunikation i nutid och framtid" - En teknisk vetenskaplig orientering inom ett brett samhällsorienterat område

Bilagor KVA-INFORMATION 1972/11  
 Invalsförslag  
 DOCUMENTA KVA 2

Kommunikationer

Bussar linje 540 fr Humlegårdsgatan Kl 17.30  
 602 } " Sveavägen " 17.10  
 612 } mitt emot Handels- 17.20  
 603 } högskolan " 17.30

Kungl Vetenskapsakademien håller sammankomst för behandling av ärenden rörande Nobelstiftelsen i sessionssalen, Frescati

ONSDAGEN DEN 13 SEPTEMBER 1972 KL 18.00

Ärende	Åtgärd
1. Val av två granskningsmän	
2. Förslag om inbjudan att inkomma med förslag om utdelning av nobelpris i fysik 1973	
3. Förslag om inbjudan att inkomma med förslag om utdelning av nobelpris i kemi 1973	
4. Förslag om inbjudan att inkomma med förslag om utdelning av Sveriges Riksbanks pris i ekonomisk vetenskap till Alfred Nobels minne 1973	
5. Förslag om ersättning för visst utfört sakkunniguppdrag åt priskommittén för ekonomipriset	
6. Hemställan från priskommittén för ekonomipriset att få tillkalla ytterligare tre sakkunniga	
7. Ansökan om anslag till en Nobel-work-shop	
8. Anmälan av Nobelstiftelsens räkenskaper 1971	

Kommunikationer

Bussar linje 540 fr Humlogårdsgatan Kl 17.30  
 602 } " Sveavägen " 17.10  
 612 } mitt emot Hardels- " 17.20  
 603 } högskolan " 17.30

replaced Manne Siegbahn just in 1959, and should have been in a position to be aware of any such complaints. Rudberg is still Chairman of the Physics Committee, but will retire at the end of the year when he will be replaced by someone who will be elected by the members. Fredga is still Chairman of the Chemistry Committee. When Bernhard assumes the position of Permanent Secretary on January 1, replacing Rudberg, he will resign as President and a new one will be elected. Rudberg told me that the voting by the membership of the Academy to determine the recipients of the 1972 Nobel Prizes in Chemistry and Physics will take place at a meeting to be held on the morning of Friday, October 20, and I am welcome to attend and participate in my role as a foreign member of the Academy. He will send me the dates of future meetings of the Academy so that I can fit them in with future trips to Europe.

Bernhard told me about the African Insect Institute, devoted to biological control as opposed to chemical control, which is being supported by the Swedish Academy, the U.S. National Academy, the U.S. American Academy, the Royal Academy, the French Academy, and other Academies of Science. He said he will send me information on this, and I said I would send him a reprint of my article, "Scientific Safari to Africa." I told him of the planned international activities of AAAS and of my meeting with Keldysh. We discussed progress on the International Science Foundation, which now has its Secretariat located in Stockholm and whose temporary President is Sven Brohult, the President of the Swedish Academy of Engineering Sciences.

After the Academy meeting and supper, I rode with Peterson to the Foresta Hotel in Lidingö, where I checked into room 801. This is a large, rambling, old-fashioned resort type of hotel, with a labyrinth of wings and corridors.

Thursday, September 14, 1972 - Stockholm - Frankfurt - Darmstadt

I had a buffet breakfast in a restaurant on the sixth floor of the hotel. A record by "Taube-Bellman" was left for me at the hotel desk, with no indication of who gave it to me.

I rode to Arlanda Airport with Sandström and Peterson. At the airport I bought two scarves and a pin for gifts. I boarded Lufthansa Flight No. 019, which left at 9:00 a.m. and arrived in Frankfurt, after a stop in Hamburg (where we underwent passport control, customs, and hand luggage search) at 12:10 p.m.

I was met by Schmelzer and we rode in his car with his driver to the Hotel Deutsches Haus in Langen b. Ffm where we had lunch. We then drove to the GSI where I met in Schmelzer's office with him, Herrmann, Armbruster, Bock, and Schuff. We discussed some possible terms for LBL-GSI collaboration in heavy ion research. They said they have an okay from Bonn (Schmelzer was there yesterday), but they will receive no increase in budget for this purpose. I suggested they send to Berkeley five physicists of the calibre and aptitude of Hans Gutbrod to help to improve the beam of the SuperHILAC. For actual tasks, I mentioned computerizing control of the machine, improving ion source no. 1, working on perfecting stripping foils, tuning machine to maximize beam, etc. I also mentioned working on experimental equip-

Thursday, September 14, 1972 (con't)

ment, using building of SASSY II as an example. Their financial aid would come as support of their people in their work and not in the form of buying beam time. They agreed that buying beam time is not a desirable method of financial support. They will need, however, some better understanding of the financial support aspect. Also they need to be able to tell the people whom they want to send to us, in order to convince them to come, something about what they will be doing. I suggested they might work mostly on getting the machine to work during the first six months, gradually increasing work on experiments in collaboration with Berkeley people and other visitors. They said it would be 3-4 months before the people could be in Berkeley due to time required to find them, arrange for leaves of absence, etc. Apparently a number of them might come from Universities since GSI may not have the people of just the type needed. I emphasized that their work at Berkeley will constitute training for the program at GSI and hence it is valuable for them to have GSI people involved.

I suggested that they send someone who is knowledgeable about heavy ion accelerators and experimental program (perhaps Armbruster or Bock) to Berkeley soon and they agreed. Dieter Bjerne, UNILAC Project Leader, perhaps should also go to Berkeley for discussions at some stage. He is a friend of Bob Main. (He is presently in the hospital for repair of a torn Achilles tendon.) They also pointed out that they really can't participate in any agreement involving funding for more than two years--thus 1973 and 1974--because their fiscal year is the calendar year.

At 5:00 p.m., I called LBL and talked to Sheila about my travel home schedule and to Al about the proposed cooperative agreement. He agreed that it would be valuable to have Gutbrod stay beyond December, if he agrees and can, and suggested that he play a role to help the person that GSI sends to Berkeley to continue these discussions. He also mentioned the value to GSI of their collaboration on steering magnets being designed at Berkeley for use around the target area and he emphasized the need for early commitment of GSI funds because of projected budget troubles in the last half of fiscal 1973. I passed on these three thoughts to Schmelzer, Herrmann and Bock.

We walked to the site of the accelerator, perhaps a kilometer away, and I had another look at the building construction in progress. I again saw the accelerator 1/33 scale model, then rode with the driver to the Hotel Weinmichel in downtown Darmstadt where I checked into room 24. I had dinner in the Hotel's Weinstube with Schmelzer, Herrmann, Bock, and Armbruster. The conversation was general and wide-ranging with only a little discussion of our impending arrangement for cooperation. I did emphasize that we need an early settlement in principle because the SuperHILAC budget will not allow continued operation at even its present low level if limited to present funding. I urged them to send someone to Berkeley soon to continue discussions. Schmelzer said they could do this around November 1, but I urged them to try to do so sooner.

I discussed with Armbruster again the matter of a postdoctoral man for Stan Thompson. He said it will be necessary to make a

commitment for two years in order to interest someone and I said this would be okay. There are two possibilities at Julich (one would remain on Julich payroll and the other would have to be paid by LBL), but they are having trouble convincing their wives to come because of school and other commitments. If neither of these accepts, Armbruster will look for someone from Heidelberg or Munich. He will write Stan next week.

Friday, September 15, 1972 - Frankfurt - New York - Lafayette

I rode with Schmelzer's driver to the Frankfurt Airport after having breakfast in the Weinstube. I tried to get on Lufthansa Flight No. 490, scheduled to leave at 10:00 a.m., upon which I was wait-listed, but failed. I boarded TWA Flight No. 741, which left Frankfurt at 12:30 p.m. and arrived in New York at 3:45 p.m.

I went through passport control, customs, called Sylvia at the office to inform her of my time of arrival in San Francisco, and boarded TWA Flight No. 49, which left at 5:30 p.m., and arrived in San Francisco at 8:00 p.m. Leonard Dreher was on the flight from New York. Eric met me and drove me home.

Saturday, September 16, 1972 - Lafayette

I spent a good part of the day reading mail and papers that accumulated during my trip. In the afternoon, Dave and I went to Memorial Stadium in Berkeley to see the football game between Berkeley and Washington State. Berkeley won, 37-23, after being behind 17-0 at the beginning. Suki and I took a hike to the water tank.

Sunday, September 17, 1972 - Lafayette

I read accumulated papers. Dave, Tom and Bob Alexander, and I went to Candlestick Park south of San Francisco to see the football game between the 49ers and the San Diego Chargers. The 49ers won, 34-3. After the game, Tom, Bob and I hunted for Dave for hours because he failed to come back to the car; it turned out that when he couldn't find the car he thoughtlessly came on home leaving us unaware of his action.

Suki and I took a hike to the water tank. I returned a phone call from Rudolph Ulrich, who was calling to urge me to accept the LAFCO appointment. He believes that more attention should be paid to the soil conditions in determining sites for housing developments and said he will send me information on studies that have been made on this subject. He told me that Rodney Arkley of the Soils Department of UCB is an expert on these matters.

Monday, September 18, 1972 - Berkeley

Helen drove Eric to Davis this morning; he will remain there to begin the registration procedure, etc. for the Fall Quarter.

I attended the meeting of the SuperHILAC planning group with Ghiorso, the Alonsos, Nitschke, and Nurmia. I described my visit to Dubna and my talks with Flerov, Oganessian and others in detail.

Monday, September 18, 1972 (con't)

Don Reardon dropped in at 10:15 a.m. to give me a report at Bob Thorne's request. He and Thorne had dinner with Vice President John Perkins last Friday and Perkins indicated that the Townes Committee will definitely make a recommendation for management change in LBL and therefore, the AEC will maintain a low profile and not take any initiative. He also said that Thorne, in a recent trip to Washington, had talked to Hollingsworth and English concerning my proposal for a cooperative arrangement including some funding from GSI, and both indicated this would be all right. Reardon said he would like some indication of the terms, and I said that I would let him know as soon as a representative from GSI comes to Berkeley, perhaps within a month, to discuss this with Ghiorso and me.

At 10:30 a.m., a meeting was held in my office to discuss the distribution of General Plant Project (GPP) funds. Present were Bob West and Elmer Kelly of LBL; Don Reardon, Jeff Zafiris, William D. Nettleton, James J. King of the AEC San Francisco Operations office; Albert Ghiorso; and Earl Hyde. We agreed to the distribution of funds for GPP as summarized on the attached sheet, but to the change that item 6 (that is, the 1500 KVA substation for the Super-HILAC) under "Program" would be deferred until next year. Safety item #3 (SuperHILAC sprinklers) would be reduced by about \$50K, and some \$26K would be added for the replacement of a master switch at the 88" cyclotron. Following the meeting, Ghiorso took Reardon on a tour of the SuperHILAC.

The Nuclear Chemistry Division Program Committee held a bag-lunch meeting in my office from 12:00-1:00 p.m. Present were Joe Cerny, Norman Glendenning, Bernard Harvey, Jack Hollander, Earl Hyde, Arthur Poskanzer, David Shirley, and David Templeton. I reported on my visits to GSI. I said that they are interested in a cooperative program and got a green light from Bonn, but were not able to get additional money. I said that I had urged them to send over Armbruster or Bock within the next month or six weeks so that we could lay out a program. Earl and others raised a number of specific questions about the content of the collaborative program, all of which will be covered in Ghiorso's forthcoming draft. I described my tour of the GSI facility and reported briefly on my participation in the Symposium in Moscow and my visit to Dubna. Earl summarized the discussion of the last Program Committee meeting on September 8. Jack reviewed the status of Andrew Sessler's candidacy for Director of the AEC Division of Research. We discussed the problem posed by H. F. Schaefer's overrun of computer time and request for additional time. We have no additional dollars to allocate to him for the year.

I dropped by to see Liljenzin and Kratz. During my absence they performed the first real experiment on the SuperHILAC on September 1--the bombardment of samarium with carbon ions to produce dysprosium alpha-emitters to test the glass frit system which worked fine. They also performed a number of other experiments with the SuperHILAC, successfully testing the glass frit system.

I met, from 5:30-6:00 p.m. at home, with Leonard Grote (City Councilman of Pleasant Hill and a member of LAFCO of Contra Costa

... Mtg. with Reardon, West, Khiorro, Keuz, Safaris  
Kelly, Hyde, B.T.S.

9/18/72  
259a

G.P. - FY '73

B210/ 8/3/72

Program Items:

1. New Cave Area for Superhilac. Chemistry substituted for 2 <sup>nd</sup> floor on 38 <sup>th</sup>	\$165K
2. Bld 58 ERA - Addition (Physics)	\$185K
3. Bld 73 Addition (Field Free - Chemistry)	\$15K
4. Bld 74 Addition (Animal House & Lab - Bio-Med)	\$130K
5. Bld 71 - Control Rm. Addition & Injector Shelter Superhilac.	\$120K
6. Bld 71 - New 1500 KVA Substation Superhilac. Power.	\$45K
Total Program.	<u>\$660K</u>

Safety Items:

1. Bld 6. Cave Area Ventilation	\$15K
2. Water System Loops for fire fighting (2 loops - Bld 26 Area & Strawberry Canyon)	\$37K
3. Bld 71 - Superhilac Sprinklers	\$170K
4. Bldgs. 50A - 50B Eyebrow Replacement.	\$100K
5. Bldgs. 16/52 Sprinklers.	\$50K
Total Safety	<u>\$372K</u>

Total Estimate

\$1032K

Funds Available.

\$1020K



County) to discuss my possible interest in becoming the public member of LAFCO (Local Agency Formation Commission) of Contra Costa County. I expressed interest but also uncertainty as to whether I had the time to do the job adequately. The four members of LAFCO make the choice of the public member. I said I will probably talk to the whole membership before making up my mind. I told him that I couldn't meet on Wednesday afternoons and would prefer Thursday afternoons.

I worked in the back yard cutting weeds and watched the Washington Redskins-Minnesota Vikings football game on TV, which the Redskins won, 24-21.

Tuesday, September 19, 1972 - Berkeley

From 9:00-10:00 a.m., Helen, Emilio Segre and I met in my office with Mark M. Monnheimer and Ron Gilson of the firm of Steinhart, Goldberg, Feigenbaum, and Labar to sign the Trust Agreement on the Grizzly Peak Property Trust and the corresponding Grant Deed (as drawn up by Adrian Kragen).

I had lunch with Walter Greiner, Hans Gutbrod, and Al Ghiorso outside the cafeteria to discuss the negotiations for the agreement between GSI and the Berkeley SuperHILAC group. It is agreed that Al will try to write up a draft of the principles of the agreement which Greiner will take with him when he returns to Germany a week from tomorrow. Greiner may raise again the possibility of Bonn furnishing special funds to cover the costs of the cooperation. He will urge that a representative of GSI come to Berkeley as soon as possible. We agreed that after that, it would probably be necessary for Ghiorso to visit GSI to continue the negotiations.

At a neighboring table, I met Ray Sheline of Florida State University, who is here on sabbatical until about January, and his co-worker Peter Kleinheinz of Stockholm, who will also be here during that period.

At 1:35 p.m., Bahman Parsa of Iran dropped in to see me. He said he is an Associate Professor of Nuclear Chemistry at Tehran University and is here on a Fulbright Exchange Fellowship to work with Professor Samuel Markowitz for about ten months. He is working on activation analysis using  $\text{He}^3$  bombardments and later hopes to work on fission products formed by heavy ion bombardment in the SuperHILAC. He reminded me that he had met me on three previous occasions: (1) in 1966 or 1967 when I visited M.I.T. and Glen Gordon, with whom he was working at that time, (2) on my visit to Tehran in April 1970 when I gave a talk on the superheavy elements at Tehran University, and (3) at the reception given by the American States at the IAEA General Conference in September 1971 when he was one of the delegates from Iran.

I called Joe Katz at Argonne at 2:45 p.m. He told me that Bob Penneman had stopped in Chicago on his way home from the Moscow Symposium and that they had had a "frank exchange of views" about our revision of Chemistry of the Actinide Elements. They came to some conclusions which he said they expected to discuss with me in due course. In the interest of cutting down on time, they think we should

Tuesday, September 19, 1972 (con't)

get as many good young collaborators involved as possible and they should be recognized accordingly (e.g., names on title page). They think we should concentrate our efforts on the summary chapters. I indicated that I thought this is probably the way to do it--it is sort of what we have been doing any way. Joe indicated that he will probably go to LASL next summer in this regard. I told him that the sponsors of the Moscow Symposium want to publish the Proceedings, and I inquired as to whether Pergamon Press would do it. Joe said that he is seeing Robert Maxwell this weekend; I indicated that I would get the outline of the conference into the mail immediately, together with N. B. Mikheev's address. He thought that Maxwell would go for either issuing it as a supplement to, or as an issue of, JINC. I explained that the sponsors would prefer to see it in book form and wanted to make it clear that the request was not from me but from Spitsyn. He will give me a call at the beginning of next week about his conversation with Maxwell.

Roger Hahn came by at 4:40 p.m. to bring me up-to-date on the project on the history of LBL and Science and Electronics on the Berkeley and Stanford campuses. They have obtained funding to the extent of about \$175,000 from Hewlett-Packard, dependent on obtaining a matching grant which they hope to get from the Endowment for the Humanities. We talked about his attempts to find the records of a number of members of the Chemistry Department, and I gave him some suggestions for contacts. I mentioned to him my history of the Chemistry Section C-1 of the Metallurgical Laboratory and the problem of finding someone to help put it in publishable form.

At 5:40 p.m., I talked to Andrew Sessler, who brought me up-to-date on the AEC search for a replacement for Paul McDaniel as Director of the Division of Research. It has come down to two people--Sessler and John Teem, a friend of Chairman Schlesinger. Sessler has broad support of the scientific community whereas Teem is relatively unknown.

Helen and I attended the annual orientation program at M. H. Stanley School from 7:30-9:20 p.m. After a meeting in the multi-purpose room, which was addressed by Principal Eugene Ballock, we attended the mock classes of Dianne in the rooms and the order in which she attends them during the day. Thus, we went to the rooms and heard the presentations by Mr. Fibush (mathematics), Mrs. Burkehead (physical education), Mrs. Axelson (English), Mr. Hiller (history), Mrs. Helen Cory (science), Mrs. Lloyd (library), and Mrs. Jean Cory (study hall). Helen Cory, when she recognized me, suggested that I come speak to the class when they get to the periodic table, and I said that I would consider the possibility if--through Dianne--she would let me know when this occurs.

I saw Eugene Lee and told him about my LAFCO dilemma. He told me that this is very important but that, if I accept it, I should be prepared to do a lot of work. He said that if I wanted to discuss it further, I should contact William Zion, who lives in Lafayette.

Wednesday, September 20, 1972 - Berkeley

I called Robert Hollingsworth at AEC/Washington. I told him that I was curious about the status of the replacement for Paul McDaniel. He said that they have gone through two people on a serious basis and are now talking to two others, Andrew Sessler and John Teem (now of Xerox, who was in the AEC program in the earlier days). He indicated that it is not clear that Teem would take the position if offered. Bob told me that he has seen Teem twice, that he seems like an outstanding person, and is currently on leave teaching in what amounts to a high school. I indicated that I thought he might check out the scientific community's thoughts a little further. Bob confirmed that he will be here at the end of November. I inquired about getting together with him for a briefing while I am in Washington for the annual AIF/ANS conference in November, which he said can be arranged. He told me that in spite of the extremely tight budget they are going to try to get started on a heavy ion facility, although they have no projection of success. I asked about the status of the BEVALAC, but he said they have no apportionment yet.

Gerald Tape called me at 9:45 a.m. to ask my views on the US-USSR cooperation that Ed David is working on. One question is whether there are topics in physics or chemistry that might be considered. One of the possibilities is to have the Commission consider broadening some of the things that might have been done under AEC arrangements. An item that has given problems in the past is cooperation with Dubna. With respect to heavy ions, he asked me if it would be worthwhile to designate Flerov's group and my (Ghiorso's) group as counterparts and try to push cooperation, trying to attack common problems in a more cooperative and less competitive way. I replied that it might and told him of my talks at Dubna in which Flerov pushed very hard for increased cooperation. I told Jerry that I would talk to Ghiorso about this and would call him back. Jerry said that he would like to see at minimum, a high-level blessing by this Commission and give them a list of fields in which cooperation would be useful. For example, in the area of gravity wave detection: one needs stations in this country, in Europe, and in the Soviet Union to do a good job; geography there is the prime reason. We might also do something in nuclear physics. He said that by identifying a few people in this country in certain areas and their counterparts in the Soviet Union, he hopes this will spring loose additional travel funds and exchange funds through NSF and also help in respect to visa problems and answering letters--in other words, getting higher level attention, especially on the Soviet side. I asked how this exchange commission is coming along, and he said quite well. Groups in this country have tried to develop programs that would be of interest to us and to counterpart Soviets Groups. Some of these groups have met, and all are trying to get together before the end of October. Jerry is trying to get background so that if the groups want to pursue some of these topics, they can go ahead. He said he didn't know who else was involved from our side besides Ed David. He thought Jim Schlesinger might be invited to sit in on part of these meetings because, in part, what's necessary is expansion of the AEC-State Committee arrangement. I asked if he knew how that was going; he replied that John Flaherty and Melvin Abrahams are in the Soviet Union now looking toward the next edition, or at least toward an extension of the old agreement. I

described my talks in the Soviet Union with Znanie people. (Jerry told me that Carl York is no longer at OST; he is now Vice Chancellor of Denver University.)

I talked to Ghiorso about my conversation with Tape and called Tape back at 10:30 a.m. to indicate that we think his idea will be okay. He said he didn't know how this will be pursued; he wants to get this started in the system and will let me know what develops. I had lunch outside the cafeteria with Doug Klein, of the University of Rochester, just here for the day, and Bogdan Povh and Paul Kienle, who plan to work with Diamond and Stephens on heavy ion coulomb excitation.

I walked down to the campus and dropped in on Templeton in his Dean's Office to discuss the possible appointment of John Rasmussen to fill Perlman's spot when he leaves. It will be necessary to clear this with the Chemistry Department Committee that considers new appointments, such as Assistant Professorships, and then to discuss it with the whole department. I will let Templeton know when I have a definite commitment of interest from Rasmussen.

I called Admiral Lewis Strauss at his home in Virginia at 5:00 p.m. I described Isadore Perlman's new position and plans for an institute for technical work and archaeology at Hebrew University beginning next year and thought he might like to talk to Iz on one of his trips to Washington. He indicated that just last week he sent off contributions to Tel Aviv University, Hebrew University, and the Weizmann Institute. He said he would be able to talk with Iz on October 20 and suggested that Iz call him.

I hoed weeds in the back yard before dinner. Bruce Howe and Alan Schiffer, Washington friends of Eric and starting students at Stanford, had dinner with us and spent the night.

Thursday, September 21, 1972 - Berkeley - Livermore

At 9:30 a.m., I met with Ghiorso, Kratz, Liljenzin, Jose Alonso, Nitschke, Nurmia, Meldner, and Halbach to discuss the chemical program for superheavy elements in the conference room of the HILAC Building. I described my visit to Dubna. We then continued into the regular meeting of the SuperHILAC Research Group. Ghiorso made a status report on the SuperHILAC. Progress is being made on putting the 3 MV injector (ADAM) into operation. I then gave a rather complete, 45-minute report on what I learned during my visit to Dubna and my several conversations with Flerov and Oganessian. After this, Greiner gave a talk on his ideas concerning the possible production of molecular nuclei.

I wrote Philip Handler and Ted Sherburne to report on my conversations with Keldysh et al. at the U.S.S.R. Academy of Sciences in Moscow. I also wrote to John D. Millett, Chairman of the National Academy of Public Administration, to accept membership in the Academy and to say I would like to become a member of the Standing Committee on International and Cross-Cultural Administration (copy of incoming letter attached). I wrote Karl and Jenny Adolfsson as well to tell them how much I enjoyed seeing them again (copy attached).

300



# National Academy of Public Administration

1225 Connecticut Avenue, N.W., Washington, D.C. 20036

Phone: (202) 659-9165

September 12, 1972

9/15/72

800 9/15/72

Dr. Glenn T. Seaborg  
Lawrence Berkeley Laboratory  
University of California  
Berkeley, California 94720

Dear Dr. Seaborg:

On behalf of the National Academy of Public Administration I am pleased to inform you of your election to membership in the Academy, subject to your acceptance and to your agreement to join actively in carrying out the program of the Academy.

The National Academy of Public Administration was created in 1967 to be a trusted source of advice and counsel to governments and public officials on problems of public administration; and to improve the policies, processes, and institutions of public administration through early identification of important problems and significant trends; to evaluate program performance and administrative progress; and to increase public understanding of public administration and its critical role in the advancement of a democratic society.

The founders of the Academy were 18 past presidents of the American Society for Public Administration. Each year the members elect a few additional persons to membership who are chosen for their distinction as administrators or scholars in the field of public administration and for what is believed to be their ability to further the mission of the Academy. The Academy had 126 active members at the beginning of this year. They are listed in the 1971 Annual Report, pp. 27-32, which is enclosed. The election is by mail ballot of the members from a carefully selected list of nominees prepared by a nominating committee. The 1972 ballot has just been concluded and I am writing to you as one of those elected.

The Academy has three chief ways of working: (1) collegially through Academy deliberations, colloquia, standing committees, and symposia; (2) through panels and staff which are active in selected areas of continuing interest; and (3) through special studies in depth. The Academy's methods are research, study, and analysis, review, deliberation, and where appropriate, publication. It responds to governmental requests for advice or analytical assistance, and it studies selected problems on its own initiative. The 1971 Annual Report gives some idea of the present range of Academy activities.

As explained in the enclosed section of the Bylaws, it is expected that members will be able and willing to participate, from time to time, in collegial

Dr. Glenn T. Seaborg  
Page Two  
September 12, 1972

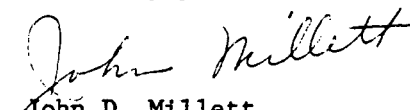
activities of the Academy, and to serve as members of study panels or in other capacities. The Academy is able to perform the role for which it was designed only as its members take an active part in its work. The annual dues of the Academy (currently \$25) are moderate. Although membership is by election, it is also conditioned upon a specifically expressed willingness of the member elect to participate in the activities of the Academy. Although we believe that it is a distinction to be elected the members regard the Academy as a working, not an honorific, body.

It is a great personal pleasure to be able to send you this notice of your election, and I hope that you will find real satisfaction in joining actively with us in carrying out the program of the Academy. Please let me know if you will be able to do so, and if so, to which standing committee (pp. 33-34 of the 1971 Annual Report) you would prefer to be assigned. I would be pleased to hear from you by September 30.

The 1972 Annual Meeting of the Academy will be held November 16 in Washington, D.C., beginning with a general session at 4:00 p.m., followed by an Academy dinner and an evening session. The business meeting will be held on November 17 beginning at 9:00 a.m. The meetings will conclude with an Academy luncheon. All sessions this year will be held at the Dupont Plaza Hotel. A more detailed program will be sent to you later.

With best wishes and in expectation of welcoming you as a member of the Academy.

Sincerely yours,

  
John D. Millett  
Chairman

JDM:rsg

Enclosures: 1971 Annual Report  
Bylaws -- Excerpt from Article IV,  
Section 1.

Excerpt from the Bylaws of the National Academy of Public  
Administration, Article IV, Members.

...Criteria for election to the Corporation membership shall include;

(a) substantial scholarly contributions to public administration; (b) significant administrative experience with evidence of sufficiently broad interests and reflective nature to interpret experience in a meaningful way; (c) demonstrated concern for the advancement of public administration and evidence of desire to contribute to it; (d) willingness and ability to contribute to the work of the Corporation...

Berkeley  
xxxxxx

September 21, 1972

Mr. and Mrs. Karl Adolfsson  
Kyrkvägen 4A  
S-71400 Kopparberg, Sweden

Dear Karl and Jenny:

I am writing to tell you that I returned home safely and that I enjoyed very much my visit with you and our other "Släkt."

Helen was delighted to get the two bottles of goodies that Jenny gave me to carry home. Dianne was very happy to receive her "Toll," which has a special place on her table.

After Karin and I left you at Grangesberg, we drove to Borlänge, and visited the place where Per works and also the house where Karin and Per live. They have a very nice house and yard. Karin then continued with me as far as the Albert Erikssons'. Our visits with Sven Lindö's and his family and with Albert Eriksson and his family in Stora Skedvi were very interesting. We had a fine lunch at the Lindö's' and coffee at the Erikssons'.

We also visited with Anna Anderson and Hilding Carlson after we left Erikssons'. I returned to Stockholm in time to attend the meeting of the Swedish Royal Academy of Sciences, of which I am a foreign member. This was very interesting.

I am returning the papers about our ancestors that you loaned to me. I have had copies made for myself.

I am enclosing copies of the newspaper stories that appeared in Nyköping in connection with my visit to the Studsvik Laboratory and my talk there. Olof and Eivar attended my talk and the luncheon afterward.

It was very good to see you again and to find you looking so well.

With love,



I drove home to have lunch, where Helen and I were joined shortly after 1:00 p.m. by Evelyn and Shelley Wilkes, and the four of us drove to Livermore. Here we attended the observance of the 20th anniversary of the Lawrence Livermore Laboratory. The ceremony was held outdoors and a large crowd was present. Roger Batzel, Director of LLL, served as Master of Ceremonies. He introduced a number of the people present; in introducing me, besides mentioning that I recruited the key people for the LLL Chemistry Division and served for ten years as Chairman of the USAEC, he mentioned that I served as his graduate student research advisor. He called for remarks by Congressman Orval Hansen, representing the JCAE; State Senator Clark L. Bradley of the Livermore District and representing the State Legislature; Dean Watkins, Chairman of the UC Board of Regents; and Robert Johnson, Vice President--Administration, University of California. Following these presentations, USAEC Chairman James R. Schlesinger spoke on a theme that emphasized the importance of nuclear weapons.



Lawrence Livermore National Laboratory 20th Anniversary: Mrs. Harold Fidler, Harold Fidler, Molly Lawrence, Elsie McMillan, Edwin McMillan, Milicent Cooksey, Donald Cooksey, Helen Seaborg, GTS: September 21, 1972.

We then went to the cafeteria to attend a reception. I had the opportunity to speak briefly to Congressman Hansen concerning current activities of the JCAE. I mentioned to Roger Batzel the Bernie Alder matter. I talked to Dean Watkins, emphasizing the importance of obtaining the release of funds for the BEVALAC from OMB. I discussed this briefly also with Ed Teller, who had mentioned the importance of the BEVALAC in his meeting with the Regents yesterday and who said he would be glad to lend a hand should he be needed; he said he will be in Europe the last three weeks in October, however. I spoke briefly with Schlesinger, inviting him to visit LBL tomorrow which he said he will try to do. He indicated that when he speaks at the Commonwealth Club tomorrow, he will be talking on the other side of my other side of the atom.

A little after 5:00 p.m., I met at home with Miss Sally Goll so she might interview me for her school paper. She is ten years old and in the sixth grade; her teacher is Phyllis Ryerson, who was Peter's 1st-grade teacher.

I worked in the back yard cutting weeds. Bruce Howe, Alan Schiffer, and Dianne's friend Cherie Alexander had dinner with us; Bruce and Alan spent the night.

Friday, September 22, 1972 - Berkeley - San Francisco

John Rasmussen came in to see me at 9:20 a.m. I told him that we are ready now to proceed with his appointment to the position being vacated by Isadore Perlman, but before beginning the long road of clearance through the Chemistry Department, campus administration and so forth, we would need assurance that he would accept the position if offered. He gave me this assurance. We talked about his position within the Nuclear Chemistry Division, and I assured him that he could move any or all of his four graduate students from Yale to Berkeley if this should turn out to be worthwhile. On the matter of postdoctorates, I couldn't be positive, but indicated that he might have to find people on self-supporting fellowships, as I had done, for at least a year or two. He said that he will apply for a Guggenheim and will include in this the possibility of a stay in the Soviet Union for a month or so. He thinks that he would specify the Institute of Chemical Physics where he could work with Goldanskii. In this connection, he might also visit Darmstadt and the Nuclear Physics Symposium to be held in Munich at the end of August next year.

I then talked with Dean David Templeton. I told him about John Rasmussen's decision to accept a position in the Department of Chemistry if offered. I told him that Rasmussen's present salary is \$27,000 per academic year. This corresponds to between Professor V and VI at UCB, and Templeton may try to make it Professor VI. He said that, besides the problem of clearing it through the Chemistry Department, he has to fight the battle of keeping the spot at all because there is an attempt to reduce the FTE's in Chemistry. I told him that I would be glad to call Errol Mauchlan in this connection at the proper time, and Templeton indicated he would let me know when this might be useful.

Friday, September 22, 1972 (con't)

I drove over to San Francisco at 11:15 a.m. with Earl Hyde and Jack Hollander to attend the regular Friday luncheon of the Commonwealth Club of California in the Ralston Room of the Sheraton-Palace Hotel. Chairman James R. Schlesinger was the speaker. Earl and I were head-table guests, and the others were: Durward S. Riggs (Executive Secretary, Commonwealth Club), James H. Hughes (Instructor, San Francisco Community College District, and past President of the Club), Robert Thorne (Manager, San Francisco Operations Office, AEC), Robert W. Jasperson (Attorney, Conservation Law Society), Edwin M. McMillan, Vernon L. Goodin (Attorney, Bronson, Bronson and McKinnon), Bruce T. Mitchell (Club Vice President and Senior Counsel, Utah International, Inc.), Dean Daskarolis (Club Quarterly Chairman, Insurance Broker), John F. Bonner (President, Pacific Gas and Electric), Stefan T. Possony (Senior Fellow, Hoover Institution of War, Revolution and Peace), and the Honorable A. Frank Bray (Presiding Justice, Court of Appeal, Retired). I sat between Bonner and Possony. Also present were a number of people from LLL, LBL, and the AEC SAN Office--such as Roger Batzel, Harold Fidler, Dan Wilkes, Bob West, and Don Reardon. Schlesinger was introduced by Daskarolis and spoke on "Nuclear Security and Nuclear Power." Actually, his speech was a defense of the Nixon Administration's defense budget and the importance of maintaining a strong level of defense. The talk was followed by the usual questions which were mainly on the defense aspects of the speech, but included one on the emergency core cooling question. In a conversation during lunch, Bonner deplored the problems they are having at the Mendocino site for their nuclear power plant. When I mentioned my visit with Arbatov in Moscow, Possony seemed quite antagonistic toward him and the Institute of U.S. Studies.

Returning to Berkeley, I met from 2:40-4:30 p.m. in McMillan's office with Chairman Schlesinger and Earl Hyde, Harold Fidler, James Bassham, Leo Brewer, Bill Wenzel, James Born, Victor Zackay, Ed Lofgren, Jack Hollander, Elmer Kelly, Robert Thorne, and Don Reardon. McMillan made some general descriptive opening remarks and then called on each of us to make short descriptions of his areas of responsibility. Following this, there was a tour of the Lab, including the Bevatron and its medical cave area, the SuperHILAC, the 184" cyclotron and its medical cave area, and the 88" cyclotron.

Ghiorso played host at the SuperHILAC. In the course of this tour, we briefed Schlesinger on the shortage of operating funds, the large group of visiting scientists who are here waiting to work with the SuperHILAC when it starts, our impending agreement with GSI for a cooperative program which will include help on funding, the nature and cost of the UNILAC, the extensive level of competition in heavy ions at the Dubna laboratory, and the importance of heavy ion research, particularly the superheavy elements. In response to a question, I mentioned the argument over AIP funds. Harvey played host during the 88" cyclotron visit, showing Schlesinger both the machine and the main area with the mass separator and so forth. Here we also made it clear that the shortage of funds was greatly curtailing the potential and will probably make it necessary to discontinue weekend operation.

Saturday, September 23, 1972 - Lafayette

I worked in the back yard cutting weeds. Helen and I went to the Memorial Stadium to see the Berkeley-San Jose State football game; San Jose won, 17-10. Cherie Alexander had dinner with us and spent the night. During the evening, Helen took Dianne and Cherie to the Walnut Festival in Walnut Creek.

Sunday, September 24, 1972 - Lafayette

I worked in the back yard most of the day. Cherie spent the day, through dinner, with Dianne.

Monday, September 25, 1972 - Berkeley

I had lunch at the table outside the cafeteria with Hyde, Liljenzin, Poskanzer, Hollander, and Bowman.

Charles Susskind called me from the President's Office at 1:30 p.m. to urge me to arrange visits to the other campuses of the University this year. I indicated that I have already scheduled lectures at Riverside, Irvine, and Santa Cruz for the fall quarter and expect to have covered all of the campuses this year.

Walter Sullivan of the New York Times called me at 1:45 p.m. He said that he had just learned that Francis Perrin had today made an interesting report to the French Academy of Sciences, which Justin Bloom thought I might be interested in. Perrin reported that uranium ore from Gabon had some uranium with 0.62%  $U^{235}$  content and some unusual isotopic composition of rare earth elements. Perrin indicated that this might be due to a nuclear chain reaction in the uranium ore deposit which took place some 1.7 billion years ago. I indicated that, although this interpretation had some difficulties associated with it, it would be difficult to otherwise account for the facts.

I worked in the back yard cutting weeds before dinner, and after, watched on TV the Kansas City Chiefs-New Orleans Saints football game, which the Chiefs won, 20-17. Dave drove the station wagon to Davis to spend a few days.

Tuesday, September 26, 1972 - Berkeley

I wrote Alexander Van Dyken, Division of Physical Research, AEC, to thank him for sending me the full report by the Physics Survey Committee and to report on my visits to GSI, Dubna and Moscow. I also wrote Helen Marie Swanson, my second cousin on my mother's side (copy attached).

I had lunch in the cafeteria with Hyde and Hollander. On the way back to my office, I ran into Tom Sugihara of the Texas A & M University 88" cyclotron group; he is here on a visit to discuss changes required to accelerate heavy ions in their cyclotron.

I called Hulet Hornbeck at the East Bay Regional Park District to learn the status of several acquisition efforts. He said that all of the condemnations have been filed and the services made in connection

## UNIVERSITY OF CALIFORNIA

Berkeley  
LAWRENCE RADIATION LABORATORY  
BERKELEY, CALIFORNIA 94720  
TELEPHONE (415) 843-2740

TELEX 335313 LAWRAADLAB BERK  
TWX 910-366-7172 LAW RAD LAB  
CABLE UCLRL BERKELEY

September 26, 1972

Miss Helen Marie Swanson  
207 North Bigelow Street  
Ishpeming, Michigan 48949

Dear Helen Marie:

We were delighted to get your last letter with all of its information. I was particularly happy that you have found the "Skratholt" record and I shall look forward to picking this up when I visit with Peter and Jane during a trip to Washington next month.

I have just returned from a trip to Europe, during which I had a fine visit to Sweden. We had a large reunion of the "Släkt" at Laxbrostugan in Stockholm's Skansen Park. This is the house in which Morfar's ancestors lived in the period around 1650 to 1700 and which was moved to Skansen about 75 years ago. I am enclosing a newspaper account which includes a picture of the "Släkt" at the Solliden Restaurant in Skansen. You will be able to see part of Karl and Jenny. Little Peter Gustavson on my lap is the grandson of Olof and Eivar Bloom--Eivar is the daughter of the Bäcklins', Morfar's relatives who live in Stockholm.

I also visited with cousins Gösta and Irene Adolfsson and their daughters Eva and Lena, and with Bengt and Britta Adolfsson in Eskilstuna. I then went up to Kopparberg and spent the night with Uncle Karl and Aunt Jenny, and here I also saw Per and Karin [Adolfsson] Möller and their son Göran. The next day I also visited their home in Borlänge. Also the next day, I visited a number of Morfar's relatives in Stora Skedvi--the Sven Lindås family, the Albert Eriksson family, and Anna Anderson (84 years old).

The event that brought me to Sweden was the Studsvik Lecture, which I delivered at the Swedish Atomic Energy Company's Studsvik Laboratory. I am enclosing some newspaper

- 2 -

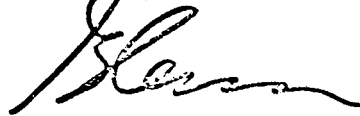
clippings that cover my visit to Studsvik and Nyköping, which is near the Studsvik Laboratory.

I hope that you are feeling better and that your dizziness will go away.

We are all fine. Peter and Jane are still living in our house in Washington. Lynne and Bill have moved to Lafayette, Indiana and are going to school at Purdue University. Lynne is working for her Ph.D. in Clinical Psychology and Bill is taking a pre-med course. Dave is starting to work for his Ph.D. in Zoology at Berkeley. Steve is continuing at the University of California at Davis, and Eric is starting at Davis this month. Dianne, who is now in the 8th grade, will be the only one home with Helen and me.

Please give our best regards to everyone.

With love,

A handwritten signature in cursive script, appearing to read "Helen".

Areas of Possible Collaboration with GSI and its  
Associated Institutes and Universities

The preliminary operations of the SuperHILAC essentially prove the design and have indicated that it will eventually become an excellent accelerator and a very useful tool in many fields of nuclear physics and chemistry. Unfortunately, however, we do not at present have adequate manpower and equipment to attain viable operating conditions, except on a prolonged time scale.

There are a number of areas which require intensified effort at Berkeley and, for this purpose, skilled manpower is mandatory; but an increase of engineering and physics personnel without the concomitant funds that are essential to the support of additional effort would be counter-productive. In LBL at present, supplemental funds averaging about \$50,000 per year are required for each man working in the fields of research, development, and construction. These funds are required for materials, support personnel in mechanical and electronic construction, and for the usage of computer and similar equipment which are the tools of the engineer and physicist. Without funds for these support activities, new professional manpower would be wastefully utilized to a frustrating extent. We do not presently have funds adequate to provide the necessary support to our corps of highly experienced personnel, and it

- 2 -

would not be in our best interest to expand our present professional staff, without additional funds to provide the required technical support.

We propose a cooperative effort by GSI and LBL personnel in a program of research and development on projects of mutual interest. We estimate a useful and reasonable number of about five GSI professional personnel, with accompanying funds in the amount of \$250,000 per year, to provide the necessary support activities indicated above. We suggest an initial planned duration of this program of two years.

This program offers a superb opportunity for GSI personnel to gain valuable experience in the design, operation and use of an accelerator and beams comparable to the Unilac. This experience in this rapidly changing field, will more than repay its costs, as the Unilac comes on-line. We have been impressed by the quality of your people and believe that they will profit greatly from the actual experience with the specialized techniques and apparatus at the SuperHILAC. It has required some fifteen years for the Berkeley Heavy Ion group to build to its present position; the design and construction of the SuperHILAC for the relatively small sum of three million dollars is testimony to the quality of the personnel. By working with our group, GSI scientists and engineers will gain insights which will be extremely important to them in the Unilac construction, operation and experimental programs.



- 3 -

The Berkeley group would, in turn, benefit through this GSI personnel who would bring not only their experience but also a new perspective to our common problems. In addition we would gain their assistance in the development of techniques and equipment necessary to bring the SuperHILAC to full operational status.

The projects for which cooperative effort can be planned are, of course, limited by the areas of interest and competence of the GSI personnel who are able to participate. They will, however, generally be within three main areas: accelerator technology, experimental equipment technology, and experimentation. The HILAC operation and the preliminary operation of the SuperHILAC have indicated numerous requirements in the first two categories; the last is necessarily in an indefinite state at the present time and will require considerably more thought as our collaboration develops.

The projects which are of immediate interest to the SuperHILAC group are indicated below. The projects are not all-inclusive, nor are they listed in the order of priority. They are intended only to indicate some of the possible projects which we believe are of common interest.

Accelerator Technology:

Preliminary experience with the SuperHILAC separated linear accelerator cavities indicate that the system is much more complex than had been anticipated, particularly when high

- 4 -

energy resolution is required. The effects of errors in rf phasing between the elements of the system, and the rf amplitude in individual cavities are more complex and pronounced than computer studies had indicated. There appears to be a significant coupling between the transverse and longitudinal particle motion which is enhanced by these phase and amplitude errors. Beam monitoring instrumentation (for use with heavy ions) must be developed so that these effects can be more carefully investigated. These include beam position indicating equipment, transverse phase monitoring equipment, energy and energy resolution measuring equipment, equipment for the determination of beam distribution in longitudinal phase, etc.

The technique of beam time-sharing as proposed for the SuperHILAC is applicable for all linear accelerator systems. Although solutions for the problems of beam monitoring and system control for this mode of operation are arbitrary, the fast beam switching equipment must be essentially identical for all linacs. The SuperHILAC group will presently commence a program for this application, as a portion of the BevaLac program.

The SuperHILAC is the first accelerator to utilize cryopumps as its primary pumping system. This pump, when applied to linear accelerator systems, can be at least a factor of two less expensive than conventional diffusion or ion pumps. The SuperHILAC pump is in operation, and has proven to be

- 5 -

entirely satisfactory and reliable. Development of this technique will continue, to make possible its extension into the beam transport and experimental areas.

Ion source development at the SuperHILAC is restricted to the PIG source (cold cathode, plasma heated cathode and indirectly heated cathode). Primary emphasis is presently on the techniques necessary for the introduction of metals and refractory materials into existing ion sources. It is expected that this program will be expanded within the year to include various other configurations of the HILAC source, as well as other types of sources.

As the ultra-heavy ions become available from the accelerator, work will commence on the development of stripping systems. These will include both gaseous and foil materials.

Experimental Equipment Technology:

During the past six years the HILAC magnet group has been involved with the development of analytical techniques for the design of conventional steel-copper magnet systems. These techniques include highly sophisticated computer programs for the optimization of steel-conductor configurations to produce extremely compact, low power electromagnets for use in beam transport and in particle spectrometry. The group will continue these studies, with emphasis on the development of methods for the production, to a high accuracy, of the field configurations necessary for high resolution spectrometry.

- 6 -

Techniques presently under investigations include the use of the  $H_t$  pole windings, pole edge slots and voids, methods for the accommodations of the effects of eddy currents, etc.

These techniques will be applied, as developed, during the continuing fabrication program of the numerous magnetic beam transport elements necessary for the proposed complex, SuperHILAC experimental area, and for the high resolution spectrometers required for the various experimental programs (SASSY II).

Drastic improvement of target-cooling techniques beyond those presently available are necessary for even moderately intense ultra-heavy ion beams. A considerable effort is expected to be expended in this development.

The development of techniques for the fast (few micro-second) mass analysis of recoil atoms is necessary for investigation of short-lived reaction products. These techniques must necessarily accommodate variable charge state of the recoil products. Primary emphasis at Berkeley has been with the gas-filled magnetic spectrometer, which is incorporated as a portion of the Small Angle Separator System (SASSY I). Considerable development of this technique remains to be done.

Work is now being carried out in the development of fast, automatic chemistry systems, necessary for the analysis of isotopes with reaction cross-sections in the millibarn range and with half-lives in the ten second range. Several thousand

- 7 -

individual chemical separations must be performed, before sufficient statistics can be collected to determine physical and chemical properties of these isotopes. The development of schemes for high collection and separation efficiency will be of prime importance in these endeavors. The glass frit and helium jet are two promising techniques which will be investigated. A further step in this development would be the Recoil Mass Analyzer (RAMA) systems.

Experiments:

It is contemplated that the GSI collaborators would be initially involved primarily in the above described areas (accelerator technology and experimental equipment technology). As the SuperHILAC is developed to the point of reliable operability, these (and/or other) participants would spend an increasing portion of their time on experiments in collaboration with LBL physicists. It is to be expected that, as the Unilac nears completion, these activities would become the primary and almost exclusive activity of the GSI group.

It should be noted that some German-LBL collaborative experiments are presently in progress at the SuperHILAC. In addition there are eight Germans working in heavy ion research at the 88-inch cyclotron, while they are waiting for the SuperHILAC to become operable. These include Professor P. Kienle of Technical University at Munich (who is on the Lawrence Berkeley Laboratory payroll) and Professor B. Povh of the

- 8 -

University of Heidelberg (who is 50% on the LBL payroll).  
Unfortunately, budget restrictions are forcing curtailment  
in the operations of the 88-inch cyclotron.

with the Huckleberry Trail Area. They are proceeding with the condemnations for the full Huckleberry Trail unit, but something came back to them (through Margaret Bowman of the Citizens Task Force) that Ned Robinson had criticized the District for not sitting down to negotiate with him about this. Hulet indicated that all of his calls to Robinson have not been responded to and he is satisfied that the District is doing its share (he told me that Bowman was an insurance man from Robinson's firm in its early stages and has said that he knows it is possible for them to settle). Hulet said there is no break on the price; they are not really discussing figures at this time. In connection with Point Pinole, he said that on August 17, he and John Levitt (a new Board member) visited Bethlehem Steel officials in Bethlehem, Pennsylvania, for four hours. Hulet thinks it was a beneficial meeting, and there have been a couple of conversations since; it has not reached the president's level, and he was advised to stay away from Stewart Cort. In regard to Sunol Regional Park, he said that the review of the Charles Moore property was brought up at the meeting of the Alameda County Board of Supervisors on September 4. However, the Board was split and so the matter was put off until its November 2 meeting (Hulet noted that an appeal item to the Board of Supervisors goes through if the Board is split). In regard to Camp Parks, he told me that they have asked the Bureau of Outdoor Recreation for permission to extend making any improvements on this property for a two-year period. He said that the initial publicity has died down and that both SRI and EBRPD are satisfied with the arrangements.

Walter Greiner came in for a farewell cup of tea at 3:00 p.m. I gave him our rough draft of the statement, "Areas of Possible Collaboration with GSI and Its Associated Institutes and Universities" (copy attached), which he will take back to GSI for discussion by his colleagues.

I visited with Tom Parsons in his laboratory to discuss progress on our research program.

I worked in the back yard cutting weeds before dinner.

Wednesday, September 27, 1972 - Berkeley

From 9:00-10:00 a.m., I met with Bernard Harvey, Don Morris, Frank Stephens, Dick Diamond, Earl Hyde, Joe Cerny, and Stan Thompson to discuss the budget problems with the 88" cyclotron due to the budget cut. They are running over their budget and will need to cut out the weekend shifts or sell time to outside users. The net result would be the same--namely, the cutback on the number of shifts available to the various research groups. In the latter category are the groups of Stan Thompson and Diamond-Stephens, now using 2.5 shifts per week. It was agreed that they will be cut back to 2.0 shifts per week. The High Level Cave Program, including the work of Shirley, will also be cut back. Harvey, Cerny and Conzett each use ten shifts every third week, and this will also have to be cut back.

I called Todd La Porte (Associate Director, Institute of Governmental Studies) at 10:15 a.m., in reply to his request for a \$2,000-\$2,500 research grant from us for his project on public attitudes toward technology. I told him that, although his project struck a

Wednesday, September 27, 1972 (con't)

responsive chord with me, it was necessary for me to give him a negative reply. I indicated that we have found that for even such a small amount we would have to go to the AEC in Washington for approval. I also indicated that we find that we are in worse budget trouble here than we had thought and are not sure how we will come out--at this stage every \$2,000 counts. Todd told me that his project is being well received and that it may be worth doing on a national basis in the future. He indicated that he would keep me informed of their major findings.

I called John Mayor at AAAS at 11:00 a.m., in response to his letter which enclosed Melvin Calvin's letter declining participation in the AAAS-Znanie exchange. I asked if there was any way of paying for Mrs. Calvin's fare and explained that for health reasons she always travels with him (something I'd forgotten to mention to John in our earlier conversations). He said he could approach Bill Bevan, for which I said he could carry my enthusiastic recommendation. I noted that Calvin could speak on a number of their priority areas--cancer research, photosynthesis, energy sources, and so forth, and I thought it would be worth shortening his visit if it would mean getting him there. We agreed that we would leave the substitute for Calvin open until we had approached him again. I indicated that I would send John a write-up of my meeting with the Znanie people at their headquarters in Moscow. I told him that the key to getting any action would be to send carbons of his letters to Vitalii Goldanskii and gave him the full name and address. I suggested that in his writing he could say that I reported to him my fruitful meeting with Vice President Vladimir Maslin, Goldanskii, and Kirsanov Sergei. I mentioned to him that I had briefed Znanie people about the Mexico city meetings; they were very excited and indicated tremendous interest in attending.

I had lunch in the South Dining Room of the Faculty Club with George Pimentel, Kenneth Pitzer, and David Ridgway. Pimentel told us that arrangements have been completed with NSF and approved by the Regents to have CHEM Study terminate its relationship with NSF as of January 1, 1973. We will propose to Chancellor Bowker that future operations of CHEM Study will be under the direction of an Advisory Committee consisting of Pimentel, chairman, Pitzer, and me. We will suggest that CHEM Study continue to be housed in the Lawrence Hall of Science, subject to the approval of Director Laetsch. We talked about using some of the funds that will become available for the production of films along the line of the various films in the successful series "Wondering About Things." Ridgway is past retirement age and presently on a one-year extension; we agreed, with Ridgway's concurrence, that we will ask approval for his continuance on a part-time basis as a Consultant in order to help handle the affairs of CHEM Study at the Lawrence Hall of Science.

I called Aage Bohr at 2:10 p.m. at Princeton University where he was visiting in John Wheeler's office. I invited him to come out to Berkeley while he is in the United States, but he said that he has to be back in Copenhagen next week and therefore must decline.



At 2:30 p.m., I received a call from John Wilhelm of Time magazine, following up Walter Sullivan's article in the New York Times about my reactions to the announcement by Francis Perrin that they had found a natural pile in Gabon.

At 3:20 p.m., Jack Hollander brought in Dr. James Bresee (along with Mike Wahlig) for a courtesy call; Bresee is now working with Gerald Johnson on the administration of non-nuclear energy activities of the AEC. I recalled my encounters with him while he was at Oak Ridge during my tenure as AEC Chairman. He seemed generally familiar with our proposed program in the development of solar and geothermal energy sources.

I met with Bob Hinckley from 3:30-4:00 p.m. He gave me a generally critical overview of the administration of the Lab, particularly the key people just below the Director's level. His views coincided pretty much with mine in evaluating these people. I indicated that so far as his qualifying for a top position in the reorganization of the Lab, I had received mixed reports about his performance and capability and, in addition, personally doubted whether anyone so closely associated with Physics would ever have the breadth required to recognize the proper role of Chemistry in the future of the Lab. I said that I tended toward favoring a clean sweep and bringing in new, uncommitted people for the management positions.

I worked in the back yard cutting weeds before dinner. Dave returned from Davis at 1:30 a.m.

Thursday, September 28, 1972 - Berkeley.

A prospective graduate student, Joel L. Levinson, came in at 9:00 a.m. under the guidance of Irwin Binder, who is one of Perlman's graduate students and was showing Levinson around. I explained to him about the various professors working in nuclear work here and urged him to talk to them. I described my program including that with Liljenzin and Kratz and the program with Edelstein, Kolbe, and Parsons. Levinson is more interested in the former and will go talk to them.

I had lunch outside the cafeteria with Hyde and Hollander.

I finished checking out with Chemistry Department faculty on the Hill the appointment of Rasmussen as a Professor of Chemistry; all agreed that the clearance with the Chemistry Department, the appointment process, etc. will commence.

I visited with Kratz and Liljenzin and with Kolbe in their labs to discuss progress in our research programs.

I called Joe Brady of the Lawrence Livermore Laboratory at 3:45 p.m. to suggest that if there actually is a large planet beyond Pluto, Planet X, as the calculations in his recent paper seem to suggest, it should be named after element 95 (americium). Thus, since Uranus gave its name to uranium, Neptune to neptunium, and Pluto to plutonium, the procedure would be reversed: the name of the next element would form the basis of the name of the next planet.

Friday, September 29, 1972 - Berkeley

The Nuclear Chemistry Division Program Committee held a bag lunch meeting in my office. Those present were Joe Cerny, Richard Diamond, Norman Glendenning, Bernard Harvey, Jack Hollander, Earl Hyde, Isadore Perlman, David Shirley, Kenneth Street, David Templeton, and Stan Thompson. Frank Asaro sat in on the meeting. (Al Ghiorso was on vacation, and Art Poskanzer was attending the dedication of LAMPF at Los Alamos.) I opened the meeting by noting that I had heard Chairman Schlesinger's address to the Commonwealth Club and had a copy of it available. I read McMillan's memo of September 27 announcing that Dick Connell is ill and that George Pappas is Acting Business Manager.

Earl announced that Academician Lenard Pal, Director of the Central Institute of Physics in Budapest, would be visiting here on October 4. I indicated that I wanted to be especially hospitable to him because it is very unusual to have a Hungarian visitor. Furthermore, I had visited in his laboratory in September 1969--when I was reputed to be the highest ranking American who had visited Hungary since the 1956 uprising and got in upon permission of the President of Hungary.

Hyde and Harvey reviewed the budget problems of the 88" cyclotron and said that they would now be going back to a 16-17 shift schedule. We reviewed the total budget situation/crisis for the current year. Earl projected an overrun of, optimistically, \$100,000 to, pessimistically, \$400,000. Earl analyzed where the trouble spots appear to be, based on the July-August expenditures. It is clear that some across-the-board sacrifices will have to be made. Jack Hollander raised the question as to whether the Table of Isotopes should even be continued, particularly in light of the increased support to the Nuclear Data Project at Oak Ridge and the reductions in our support. At the present time the Nuclear Chemistry Division is generally supplementing the Table of Isotopes by about half. The Committee discussed at some length the problems inherent in the accounting allocation system by which support budgets are assigned on the basis of average personnel salaries. Earl wants to go to the Budget Office with Gertrude Steel to discuss this; we suggested that Dave Shirley and Dave Templeton accompany them. We agreed that Earl and I will confer on these problems and let the Committee know whether the next meeting will be on October 6 or 13.

Beginning at 2:30 p.m., I was interviewed for Italian television by Mr. Biancocca for a program to be shown in Europe and Japan on the projections for the future, e.g., the year 2001. In response to questions, I described the dwindling supply of fossil fuels, the increasing reliance on nuclear fission power, the need for still other additional sources, such as fusion power, geothermal power and solar power, the relative environmental advantages of nuclear power, the need to conserve fossil fuels as a source of chemicals, and the difficult but soluble problems of waste disposal and reactor accidents in the case of nuclear fission power.

The Los Alamos Meson Facility was dedicated in a rather peculiar ceremony this afternoon. Under direct orders from the White House, Julie Nixon Eisenhower appeared as a featured speaker. She spoke

CITIZENS FOR URBAN WILDERNESS AREAS  
1052 Merced  
Berkeley, California 94707

CUWA convened in a meeting at the above address on September 30, 1972, at 2:00 p.m. A list of those attending is attached.

Dr. Seaborg, Chairman, called the meeting to order and gave a brief report of CUWA's activities since the first, organizational meeting on May 29th. CUWA stationery was designed and printed and a few letters have been written, including one to each member of the EBRPD Citizens Task Force summarizing progress on the Huckleberry Preserve Area following CUWA's proposal to the EBRPD Board at its June 6 meeting and also pointing out the possibility of acquiring an additional 250 acres for the Preserve besides the 50-odd acres now in condemnation proceedings.

The following agenda was then considered and action taken as indicated:

Huckleberry Preserve Area

The Chairman reported that he had recently contacted Hulet Hornbeck of EBRPD who stated that all condemnations had been filed and services made for the first 50-odd acre unit and that condemnation proceedings were necessary as the property could not be purchased outright. A general discussion then followed concerning the problems involved in acquiring the Preserve property, the current status of acquisition proceedings and the need for CUWA's continued follow-up efforts (in this latter regard, Dan Lutten stated he would call Hulet Hornbeck). In addition, it was recommended that a field trip to the Huckleberry area should be arranged for the EBRPD Citizens Task Force members, and Susan Watson, with Margaret Bowman assisting, was delegated to set up a definite date early in 1973 for this purpose.

Point Pinole

The Chairman stated he had asked Hulet Hornbeck for a status report on this area and that Mr. Hornbeck informed him that last August he and another member of EBRPD had met with Bethlehem Steel Co. representatives concerning this area, that Mr. Hornbeck felt this was a beneficial meeting, that he was very optimistic about the prospects and every effort was being made to acquire this land.

Sunol Regional Park

Regarding the proposed second residential development east of Sunol Park, it was reported that no vote was taken on this proposal at the August 4th meeting of the Alameda County Board of Supervisors and that the matter has been put over until the November 2nd meeting. It was agreed that a statement should be presented on behalf of CUWA at this November 2nd meeting. Consideration was then given to selecting someone to make this presentation for CUWA and, upon Marion Reeve's recommendation of Dr. Bari Nasapligil of Mills College as a qualified person to represent CUWA in this matter, Dr. Reeve was designated to take responsibility for securing such a representative and to request Dr. Nasapligil to testify on CUWA's behalf in this matter at the November 2nd Alameda County Board meeting.

Camp Parks

The Chairman had discussed this area, also, with Hulet Hornbeck, and Mr. Hornbeck stated that EBRPD had asked the Bureau of Outdoor Recreation about making improvements on this property in the next few years.

Point Richmond

The Chairman called on Lucretia Edwards for a report on Point Richmond. Mrs. Edwards stated that in late June Al Baum had asked the Contra Costa Shoreline Parks Committee to give him and two of his colleagues from Overview a tour of the Point Richmond area. The Committee did so and also gave Mr. Baum a great many ideas about the area, stressing particularly that the size is of critical importance. Following the tour, Mrs. Edwards wrote out a complete account of it and sent this in letter-form to Mr. Baum. Subsequently, it was suggested to her that the Citizens Task Force should also see this document. She was then requested to read the letter to the CUMA meeting and, following this, it was agreed that this is an important document for every EBRPD Task Force member to see and that it is within CUMA's proper realm to distribute it to them, with an accompanying letter on CUMA stationery containing introductory, explanatory remarks prefacing the document. Mrs. Edwards agreed to take the responsibility for reproducing her letter (it was recommended that a preceding brief description of the location of the area be added) and she is also to help draft the covering letter from CUMA, the letter to be submitted to Dr. Seaborg for approval before mailing. These letters are then to be sent out as soon as possible, before the October tour of the Bay by the Task Force members, if possible.

Brooks Island and Point Isabel

In connection with the discussion of Point Richmond, Brooks Island and Point Isabel were also brought up. The importance of Brooks as a prime educational area was stressed because of the wildlife and flora on the island. However, it was the consensus that CUMA does not have sufficient background information and material on these two areas on which to take any official action at this time and thus it will be necessary to have inventory write-ups made on these areas before CUMA can proceed. William Landis was thereupon designated to pursue the matter of obtaining such write-ups and to report on this at the next CUMA meeting.

Albany Hill

Catherine Webb, representing Friends of Albany Hill, reported on that area. A proposal is now before the Albany City Council for a private developer to build several hundred units of high-rise apartments on the west side of the hill. The City Council and Chamber of Commerce have given the impression that this development will result in great financial benefit to the city. Originally, Friends of Albany Hill had organized in order to offer some alternative plan for recreational development of the hill, such as a community meeting hall, swimming pool, etc.; however, upon further investigation the Friends group abandoned this plan when they found what serious pollution and noise-level problems exist (a State Department of Health report showed high lead content in the grass on the hilltop; there is also a HUD Environmental Impact Statement).

Subsequently, the Friends group received a request from the Committee considering the Golden Gate National Recreation Area bill for information on Albany Hill, and the Friends group prepared a written statement for submission to the Senate Interior Subcommittee hearing (copy attached) as well as providing this information to Senators Cranston and Tunney.

Albany Hill. Cont'd:

CUWA was in general agreement that this area does have urban wilderness potential and the decision was made that, until CUWA can focus on what is best to propose and when the proper time would be to make such a proposal, an experimental letter should be prepared, expressing CUWA's concern that another natural area--and a natural landmark with Indian heritage as well--will be lost. Catherine Webb and Roger Reeve were appointed to draft this letter to submit to the Chairman. The need to get the facts before the public was also stressed and it was decided that all those of CUWA who have personal contacts with influential people in the media would make calls to them in an effort to get this matter publicized.

Watson Initiative

The impact of this ballot measure on park funds for buying land was first discussed. It was mentioned that the EBRPD Task Force does not have this subject on its agenda before the election and that they should consider the implications on their land purchasing program before the election in the event the measure should pass. Susan Watson stated there is to be a subcommittee meeting at the Park District Headquarters on Tuesday, October 3, which she will attend, and it was decided that this matter should be brought to the subcommittee's attention at that meeting and that this informal approach to the Park District would be used to express CUWA's concern about the effects of the Watson Initiative on EBRPD's land-buying program.

Then followed a discussion of the public position CUWA should take on the Watson Initiative itself, and it was agreed that CUWA should oppose this measure and coordinate its statement with the committee working against the Initiative. Thomas Bowman was then asked to draft such a letter to the official committee opposing the Watson Initiative, to the effect that CUWA joins in opposing it, and to clear this statement with some of CUWA's key people before it is released.

Regional Govt. Bill

Margaret Bowman brought up the matter of the Regional Govt. bill that Assemblyman John Knox is introducing in the Legislature. She stated she attended the hearing on it and that it is essentially the same basic bill as previously except the membership would be appointive instead of elective. Regarding the map of potential park space, the regional parks were shown without connecting links. It was agreed that Mrs. Bowman should explore this problem with ARAG on behalf of CUWA.

CUWA Treasury

With regard to authorized mailings and the costs involved and expended, the problem of operating expenses of CUWA arose. Joyce Burr reported \$20 had been paid for CUWA stationery and \$16 for purchasing two rolls of stamps--a total of \$36 to date. It was decided to take up a voluntary collection at this point and a total of \$83.50 was collected for the treasury, to be turned over to the Treasurer.

CUWA Inventory

The final matter considered was the need to identify the areas in this urban region which CUWA believes should be preserved in the urban wilderness sense, and it was agreed that CUWA should have such an inventory. Marion Reeve was appointed to look into this project.

NEXT CUWA MEETING

Saturday, December 2, 1972, at 2:00 p.m. was set as CUWA's next meeting date. It will be held again at 1052 Merced, Berkeley, and Roger Reeve is to send out reminder notices in advance.

briefly, along with Louis Rosen, Harold Agnew, and Senator Joseph Montoya. Senator Clinton Anderson was present on the stage but did not speak. There was a very small crowd, and it was apparent that Louis Rosen and others at Los Alamos were quite dissatisfied with this procedure. Art Poskanzer attended in connection with his visit to Los Alamos for other business.

I cut weeds in the yard before dinner. Dianne's friend Cherie had dinner with us. Dave attended a reception for zoology graduate students in the Howard Room of the Faculty Club. We learned that he has been awarded a Teaching Assistantship. He moved into his room with the Dairiki (Janis and Ned) family on Indian Rock Road in Berkeley.

Saturday, September 30, 1972 - Lafayette - Berkeley

I worked in the back yard in the morning.

From 2:00-4:30 p.m., I presided over a meeting of Citizens for Urban Wilderness Areas (CUWA) at the Roger Reeve home in Berkeley (minutes attached). The officers present were Tom Bowman (Vice Chairman), Roger Reeve (Corresponding Secretary). Geraldine Jackson (Treasurer), and Karen Davis (Recording Secretary) were absent, and so Mary Jane Sills took the notes.

We discussed a range of items. Regarding the Huckleberry Preserve, I gave a report on my call to Hulet Hornbeck. Sue Watson will try to arrange with officials of EBRPD a field trip for the Citizens Task Force members to the Preserve sometime in January or February. Margie Bowman will confer with ABAG officials concerning putting Huckleberry Trail on their official map. I reported on my conversation with Hulet Hornbeck about Point Pinole. Marian Reeve will be responsible for seeing that a CUWA representative attends the November 2 Board of Supervisors meeting when they discuss the Sunol Regional Park situation. I reported my conversation with Hornbeck about this and the Camp Parks problem.

Lucretia Edwards gave a report on the letter she has written to Alvin Baum about an expanded George Miller Park, to include Nichols Knob and other areas in the neighborhood of Point Richmond. Lucretia will duplicate her letter to Baum and draft a covering letter which I will check, sign and send to Task Force members. Catherine Webb, Chairman of "Friends of Albany Hill," gave a report on the Albany Hill situation. She will prepare a letter with the help of Roger Reeve for possible future use. I will try to call Jon Rice to arrange a program on KQED publicizing the problem. Sue Watson will call to the attention of the EBRPD officials the advantage of using their borrowing authority before the Watson Initiative takes effect, should it pass in the November election. Tom Bowman will write the group opposing the Initiative, of which Norman Topping is chairman, saying the CUWA would like to associate itself with this group. Sue Watson will have lunch with Alvin Baum to raise the question of whether Overview has the right policy in advocating the public use of roads in regional parks, and I will confer with Stewart Udall on this should it be deemed necessary on the basis of Sue's conversation with Baum. Finally, we took up a collection of money for operating expenses of CUWA.

Helen drove David to Davis so that he could attend Alumni Day, after he had taken the zoology department test for beginning graduate students in the morning. He is spending the night in Davis at Hammarskjold House.

Helen and I had dinner at the home of the Consul General and Mrs. S. K. Bhutani, at the Indian Consulate, 15 Junipero Serra Boulevard in San Francisco. Those present were: Mr. and Mrs. Daniel E. London (Advisor of the President, United Air Lines), Mr. and Mrs. Louis W. Niggeman (Chairman of the Board, Fireman's Fund Insurance Company), Mr. and Mrs. C. M. Van Vlierden (Executive Vice President and Head of International Development, Bank of America), Mr. and Mrs. Louis J. Mulkern (Senior Vice President and Head of the Asia Division, Bank of America), Mrs. Madeline Haas Russell (former Director of the State Department Reception Center in San Francisco and currently a member of the Democratic National Committee), and the guest of honor, Mr. Y. B. Chavan, Finance Minister of India. Mrs. Russell and C. M. Van Vlierden had an interesting debate regarding the McGovern candidacy.

Sunday, October 1, 1972 - Lafayette

I spent most of the day working in the back yard. Helen drove to Davis to bring Dave back to his home in Berkeley. I had a long talk on the phone with Steve (at Davis) in the evening. Everything seems to be okay. He is 1A in the draft but his number is high enough, so he probably won't be called up.

Monday, October 2, 1972 - Berkeley

I attended Professor George Pimentel's opening lecture for Chemistry 1A in the Physical Sciences Lecture Hall from 9:10-10:00 a.m. It was a good talk featuring the mechanics of getting started in the course and the value of chemistry in understanding smog.

I walked up to my office on the hill to spend a few minutes going over my mail. John Fink called me from the University of Tulsa, Oklahoma at 10:45 a.m. He invited me to lecture to their chemistry course in connection with a major revamping of the course in which they are trying to make it more interesting to students. I indicated that I would be very interested in this, however, my schedule for this academic year made it impossible for me to accept his invitation.

I held my regular office hour in room 446 of Latimer Hall from 11:00 a.m. to noon, and then attended the regular weekly luncheon of Chemistry Department faculty in the Howard Room of the Faculty Club.

I taught the first session of my Chemistry 1A laboratory section in Room C with Bill Bachman as my Teaching Assistant. (On Wednesday I will teach in Room F with Ricky Abramson as my T.A.) I lectured from about 1:15-2:00 p.m., including a description of the enrollment process, checking out of lockers, etc. I stayed until about 3:30 p.m. to help the people in the two rooms get started on the experiment, a special Experiment O involving a pulsating chemical reaction.

After walking back up the hill and spending a few moments in my office, I attended the seminar by John Rasmussen in the Building 70A Conference Room on "Adventure with Nuclear Rotation."

I worked in the back yard before dinner.

Tuesday, October 3, 1972 - Berkeley

I called Caspar Weinberger in Washington to invite him to visit the Lawrence Berkeley Laboratory while he is in the Bay Area to speak at the Commonwealth Club on Friday. He indicated that he wants to have a complete tour of LBL, but wouldn't be able to do so this trip since he has to speak in the state of Washington that evening. We briefly discussed my impressions upon returning to academic life; I commented that I've never seen a more serious student body as a whole and that it appears that they have learned that they must prepare themselves for the future with skills.

At 10:30 a.m., I called Jonathan Rice at KQED in my capacity as Chairman of CUWA. I indicated that one of our members, Catherine Webb (Chairperson of Friends of Albany Hill) hoped they could get some sort of help from Channel 9 in their efforts to save Albany Hill from developers. He said they are doing no local programming now, except for Newsroom, which is managed by two people. He said he would contact Mrs. Webb and pass this along to the Newsroom people, but could not guarantee what the coverage would be. He told me that KQED is in a financial crisis, having lost some million dollars through the President's veto of the Public Broadcasting bill and because of increased costs.

I had lunch at the table outside the cafeteria with Hyde, Stephens, Poskanzer, Kienle, Jim Griffin, and others. Griffin, Poskanzer and I talked about the possibility of having a talk at a coming Gordon Research Conference on Nuclear Chemistry, perhaps at a Thursday night dinner, in which the previous Conferences would be reviewed with emphasis on the personalities involved and illustrated with slides showing these people as they appeared throughout the years.

From 1:30-2:30 p.m., I participated in the monthly telephone (nationwide) hook-up to discuss research progress on the superheavy elements with Myers, Swiatecki, Nilsson, Tsang, Meldner, Seeger, Huizenga, Nix, Thompson, and others.

I worked in the back yard before dinner.

Wednesday, October 4, 1972 - Berkeley

I attended Professor Pimentel's lecture for Chemistry 1A in the Physical Sciences Lecture Hall from 9:10-10:00 a.m.

At 10:30 a.m., Lenard Pal--Director of the Central Research Institute for Physics in Budapest, Hungary--came in by appointment to see me. He is on an exchange program between the Hungarian and the U.S. Academy of Sciences. He attended the meeting of the IUPAP, of which he is Vice President, in Washington the week before last and has



visited Argonne, RCA, Bell Laboratories, and Cal Tech. Earl picked him up last night at the airport, delivered him to the Commodore Hotel in San Francisco, and picked him up again this morning. After a short talk with him in my office, recalling my visit to Budapest on September 30, 1969 and with his telling me the highlights of his present visit, we made some laboratory visits. We went to the SuperHILAC, where Ghiorso gave him a complete tour. Pal is on the Board of Governors of the Dubna Laboratory and thus will have something to tell Flerov when the Board meets at Dubna next January. We also dropped in briefly to see the Bevatron, and I pointed out the 184" and 88" cyclotrons.

We then joined Earl Hyde and walked down to the campus where we had lunch in the South Dining Room of the Faculty Club. Here, after lunch, I introduced Pal to Professors Gabor Somorjai and Charles Tobias, fellow Hungarians. Earl then gave him a short tour of the campus and then met Tom Parsons who drove him back to the Hotel. He will do some sightseeing this afternoon, arranged by the International Hospitality Center.

I taught my Chemistry 1A section in Room F (Ricky Abramson, Teaching Assistant). I also visited Room C where the students need more help. I stayed until past 3:00 p.m.

I worked in the back yard before dinner.

Thursday, October 5, 1972 - Berkeley - Rossmoor

At 11:20 a.m., I drove to Rossmoor (Walnut Creek) to give my scheduled talk to the combined meeting of the Rossmoor Lions, Kiwanis and Rotary Clubs at the Hillside Clubhouse. Presiding over the meeting was Don Inman, President of the Lions Club. Also at the head table sitting near me were Wally Kuenzel, President of the Rotary Club (and former resident of Glen Road); Sol Salisbury, President of the Kiwanis Chapter; and Virgil Howard, Vice President of Rotary. After the meal, Inman opened the program by introducing Kuenzel and Salisbury as the Presidents of the co-sponsoring club chapters. He also introduced Gil Bracken, first Vice President of the Lions, who presented awards to a number of winners of the recent Rossmoor Golf Tournament. There was then a singing interlude by the "Lion's Pryde" group, consisting of about 15 men and women. After this, Inman introduced me and I gave my talk, "Understanding Our Environment." Unfortunately, the man who was running the slide projector dropped the slide tray, scrambling all the slides, so I had to give my talk in the mixed up order, but it seemed to go well. After I left the group, I drove around the Rossmoor area to get a look at the place.

Spofford English called the office from Washington and talked with Jack Hollander in my absence. John Teem has been selected as the new Director of the Division of Physical Research; his appointment is effective January 1, 1973, but he will be visiting the laboratories in the interim. English indicated that he wanted to be the first one to tell Andy Sessler; however, Andy is in Russia at the moment. He said that this should be kept confidential until after the formal release tomorrow; in the meantime he told Jack that he could notify Mrs. Sessler.

David Caldwell, Physics Department at the University of California at Santa Barbara, called me at 3:10 p.m. to ask if I could advise or assist them in a problem they are having with a desired exchange program between an experiment going on at NAL and scientists at the Lebedev Institute in the USSR. The dilemma is that they are a non-state institution: they could work through the Academy Exchange Agreement, but the USAEC balks at that; however, they don't want to go through the USSR State Committee which has an agreement with the USAEC. I indicated that I didn't know what either Keldysh or I could do about this, but suggested he talk with John Flaherty in Mel Abrahams's office. I suggested that he write me a letter and indicated that I might talk to Keldysh about this when he is here but that I should have a clear objective at such a time.

Dick Diamond brought Geoffrey Wilkinson into my office at 4:35 p.m. He is here to give a seminar to the inorganic chemists in Latimer Hall tomorrow. We reminisced about his years working with me in the Radiation Lab from 1946-50 and the progress he has made since. He told me that his book, Advanced Inorganic Chemistry, which he wrote with a student, F. Albert Cotton, is now in its third edition and has passed the 100,000 copy mark.

I ran out of gas at Acalanes Road on the way home and phoned Helen who came to my rescue. I worked in the yard before dinner.

Friday, October 6, 1972 - Berkeley

At 9:00 a.m., I met with Hervasio de Carvalho, Chairman of the Brazilian Atomic Energy Commission, along with Warren Chupp in my office. He is here following the General Conference of the IAEA in Mexico City last week, which he said went very well. We reminisced about our work together in the IAEA. I took him up to the SuperHILAC where Ghiorso gave him a complete tour. De Carvalho is making a search for element 114 in a few kilograms of the volatile lead fraction recovered in the flue of a lead works, in which tons of lead have been treated. He may send a sample of this to Stan Thompson. We discussed the recent observation of evidence for an early chain reaction in uranium deposits in Gabon. De Carvalho pointed out that Gabon is thought to have touched northeastern Brazil before the separation of the continents, and thus we agreed that a search for plutonium-239 and neptunium-237 in Brazilian uranium ore from this area would be worthwhile, and he will send Ghiorso such samples. We visited with Liljenzin and Kratz in their lab, then with Thompson in his lab, and ended up with a tour of the 88" cyclotron with Harvey and Clark. De Carvalho went on to have lunch at the home of Warren Chupp, after which he will be met by son Gilbert who is now a graduate student in mechanical engineering at Stanford (he has just graduated from Davis and is a friend of Dave's).

I called Tom Bowman at 11:30 a.m. to discuss his recent letter to me. He indicated that he would call Jack Rogers when the latter returns to his office on October 16. I felt that it was necessary for him to talk with Richard Trudeau first of all, and he said he would try to do so when Trudeau is back at his office on Monday.

Friday, October 6, 1972 (con't)

Bill Bevan called me at noon to bring me up-to-date on several AAAS matters. The Joint Planning Committee for the Mexico City meeting will meet in Washington on October 19-21 (del Campo will be in the group); he has invited our Mexican colleagues to join the Board at the Saturday night dinner. Mr. Brent at the Council of the Americas has set up the meeting for 4:00 p.m. on Thursday the 20th, inviting the presidents or chairmen of about 25 of the major corporations. Brent hopes we will highlight the need to get American corporations on board to understand the roles they might play in the whole process of solving the problems of technology and development. Bill indicated that they will probably look to me for the real leadership in these discussions; he will have some opening remark notes put together for me. He reported a phone conversation with Dick Bolin; they had a successful meeting yesterday with leaders of Mexican industries. Bolin got a commitment of \$80,000 for the exhibit; they are talking now on the order of \$200,000 which will enable a month-long exhibit overlapping the AAAS meeting. The industry leaders are taking the initiative in arranging this. Bolin also told him that some of the leaders want to join us in New York on the 20th; Bill didn't see how he could say no, but wants to make it clear that they would not be there to raise money for the exhibit but to work cooperatively in the total planning. We agreed that we will meet an hour in advance of this meeting. I told him about my call from Walter Berl, saying that Berl wanted to talk with me; Bill wasn't familiar with this, but felt that my time shouldn't be taken up except for their absolute needs. He also said he would look into the status of a possible meeting with President Echeverria in Mexico City on November 25.

I talked by phone with Lew Keller from Oak Ridge, from 12:25-1:00 p.m., about a number of matters. He had talked to Boris Myasoyedov about his visit to Berkeley around November 20, and I said that we would be sure to get our notification of his acceptance in to Abe Friedman. He said that he talked at length with Mikheev about a possible visit to Oak Ridge next July and August in order to work on unusual oxidation states of fermium and mendelevium produced by heavy ion bombardment in the Oak Ridge cyclotron. They would like to have him come before Silva leaves for his sabbatical in Europe in September--Silva may go to work with Herrmann at the University of Mainz or possibly at Dubna. Since Mikheev might not have a long enough leave to come to both Berkeley and Oak Ridge, I indicated that we would probably have no objections to his giving first priority to Oak Ridge, but I will call him next week to discuss this further. We discussed in some detail Keller's visit to Dubna. He again suggested to Flerov and Oganessian that Silva visit Dubna to work next year. With respect to Oak Ridge's furnishing Dubna with one milligram of curium-248 and electronic equipment for alpha counting, Keller said that he gave a generally negative response; however, he does believe that there is some advantage in there being curium-248 at Dubna for use by Silva for the production of transfermium isotopes for chemical experiments that he might do. I said I would check this thought out with Ghiorso. Keller suggested that perhaps they should produce their own curium-248 in the Soviet Union, to which Flerov replied that they are not the Soviet Union--they are only Dubna Laboratory, and it isn't that easy. Flerov apparently asked Keller to perform experiments at Oak Ridge

that might check some of the Berkeley work, and Keller indicated a great reluctance to engage in such a program. Flerov showed Keller the letter that he was just then writing to McMillan, suggesting a cooperative program and which he seemed to regard of great importance and potential impact in Berkeley--Keller refused to speculate or comment.

David Starks, who is working in Room 1147A with Tom Parsons under Professor Streitwieser, dropped in at 2:30 p.m. to bring me up-to-date on his work. He has synthesized the thorium (IV) and uranium (IV) cyclooctatetraenes, starting with thorium and uranium materials.

Suki and I took a hike to the water tank.

I went to the La Bourgogne Restaurant in San Francisco to attend a dinner, starting at 8:00 p.m., with the Editor-in-Chief of Time-Life, Inc., Hedley Donovan. Also present were Carston Prager (West Coast Editor, who organized the gathering), Murray Gart (Chief of Correspondents), Mark Muncall (Political Science Department, Stanford University), Leon Litwack (History Department, Berkeley), Martin Anderson (Hoover Institution for War and Peace Studies at Stanford), Carroll Brodsky (UC Medical Center), and Herma Kay (Boalt Hall, Berkeley). It was a wide-ranging discussion covering the contemporary scene in America, with a great deal of emphasis on the attitudes of students and young people in the United States today and how they differ from those of the past. Muncall and Litwack represented what one might call the liberal point of view, including defense of McGovern and his policies, Martin Anderson the conservative point of view, Miss Kay and I somewhat in the middle, and Carroll Brodsky seemed to interpret everything from a psychoanalytical point of view.

Dianne and her friend Cherie gave a surprise party for Pancho which the Shermans also attended.

#### Saturday, October 7, 1972 - Lafayette - Berkeley

I worked in the back yard in the morning and late afternoon. Helen drove Dave to the Oakland Coliseum where he saw the first playoff baseball game between the Oakland Athletics and the Detroit Tigers; Oakland won, 3-2, in 11 innings. Then she and I went to the Football game between the Bears and Ohio State in Memorial Stadium, which Ohio State won, 35-18; the Bears did better than expected.

#### Sunday, October 8, 1972 - Lafayette

I worked in the yard much of the day. Helen went to the Coliseum to see the second playoff game, which Oakland won, 5-0. Dave phoned to tell us that his bicycle was stolen.

#### Monday, October 9, 1972 - Berkeley

From 9:10-10:00 a.m., I attended Pimentel's Chem 1A lecture. I walked back up the hill to my office, made a few phone calls, dictated letters, etc. I sent a recipe to Mrs. A. V. Dishman for use in the Space Coast Cook Book (copy attached).

October 9, 1972

Mrs. A. V. Dishman  
Space Coast Cook Book Chairman  
199 Antigua Drive  
Cocoa Beach, Florida 32931

Dear Mrs. Dishman:

This is in reply to your letter of September 14, asking for my favorite recipe for use in the Space Coast Cook Book. This recipe for saffron bread is a Swedish dish which was made by my mother and is still enjoyed in the Seaborg home.

#### SAFFRON BREAD

8 cups flour  
2-1/2 cups milk, lukewarm  
1 teaspoon saffron  
1 egg  
2 yeast cakes  
1 cup margarine, melted  
1-1/2 cups sugar  
1 cup mixed glazed fruits

Dissolve yeast cakes in 1/2 cup of the milk. Mix milk, saffron, sugar, salt, egg, margarine, and a little flour. Add yeast, remaining flour and glazed fruits, and beat until firm and smooth with a wooden spoon. Sprinkle with flour. Let rise, covered with towel, until double in size. Knead smooth on floured board. Divide and shape into loaves. Cover and let rise again. Brush with lightly beaten egg, sprinkle with sugar, and bake in a moderate oven (375°).

With best regards,

Cordially,

Glenn T. Seaborg

Jonathan Rice called me from KQED at 10:20 a.m. to say that tonight's Newsroom program would treat the Albany Hill story, sometime between 7:00 and 8:00 p.m. He didn't know exactly how they would treat it.

Melvin Calvin called me at 10:40 a.m. to discuss a memorandum he had received from Lawrence Mitchell of NAS about possible disruptions during Dr. Keldysh's visit because of the Levitch situation (I had not had this brought to my attention before). We agreed that we should maintain a very low profile and not advertise the visit and that everyone involved should be aware of this. Melvin said he will talk with Garff Wilson about it.

I then walked down to my Latimer Hall office and held my office hour from 11:00 to noon. David Vieira, a graduate student from Oregon State University came in to see me about possibly doing his graduate work with me. He has done some undergraduate research work with Professor Walter Loveland of Oregon State (who works on nuclear fusion) and spent the summer at Los Alamos on x-ray detection equipment. He will talk to Liljenzin and Kratz, probably this afternoon. Professor Kenneth Raymond dropped by and gave me some slides of Ce(III), Th(IV) and U(IV) COT compounds.

I had lunch in the Howard Room of the Faculty Club with the Chemistry Department faculty, then taught my Chem 1A section in Room C. When I returned to the hill, I visited Liljenzin and Kratz in their lab and joined in their discussion with Vieira of our research program.

I took a hike with Suki to the water tank. It was a rainy day. I watched Newsroom and saw their coverage of the Albany Hill story. Catherine Webb did a marvellous job of explaining the need to conserve Albany Hill in its present state.

Tuesday, October 10, 1972 - Berkeley

Walter Greiner called from Darmstadt at 8:30 a.m., saying that GSI is willing to collaborate with us, but they think that our draft of September 26, "Areas of Possible Collaboration with GSI and its Associated Institutes and Universities," emphasized the technical side too much. They would like something like 50/50 technical and experimental. He also made the point that Kienle and the others have nothing to do with GSI and they want GSI involvement. He did say they are speaking of something like one million German Marks (about \$200,000). He said that Schmelzer and a colleague (either Armbruster or Bock) will probably visit Berkeley during the first or second week in November. He also indicated that Dieter Bjorne may visit Berkeley next week following the Los Alamos conference on linear accelerators.

I attended a meeting of the SuperHILAC Planning Group in the HILAC Building Conference Room from 8:45-10:00 a.m. Present were Ghiorso, Nitschke, Nurmia, and the Alonsos. We discussed the recent reports from France of a natural nuclear chain reactor and considered the possibility that this might have been a sort of exponential pile operated by neutrons furnished by the spontaneous fission of plutonium-244. It was agreed that I would attempt to obtain more informa-

tion from the French. Ghiorso also discussed the problems with his thin windows on SASSY. They will attempt to accelerate argon ions today for the use of Gutbrod's users group and the Diamond-Stephens group.

A committee consisting of Hyde, Michel, Harvey, Poskanzer, Clark, and Markowitz met to consider the future of the Helium-3 cyclotron; they will recommend that it be dropped.

I had lunch in the cafeteria with Hyde, Poskanzer and Markowitz. I wrote Francis Perrin to request more information on his reported findings of a natural chain reaction in Gabon (copy attached).

I called Catherine Webb at 4:00 p.m. for her reaction to KQED Newsroom's coverage of the Albany Hill issue last night. She said that she was very pleased with it and thought it was a balanced, sensitive presentation. The Albany City Council will meet tonight, but she didn't know whether they will make a decision.

I took a hike with Suki to the water tank--another rainy day. In the evening, our neighbors, Cathy and Yehuda Sherman, came over to discuss the business arrangements whereby we might share their swimming pool.

Wednesday, October 11, 1972 - Berkeley

I attended Pimentel's Chem 1A lecture in the morning. I had lunch in my office, then walked down to the campus and taught my Chem 1A section in Room F.

I called Joe Katz at Argonne at 3:00 p.m. to ask whether he had heard from Maxwell at Pergamon regarding the possibility of publishing the Moscow Symposium Proceedings. He discussed it with Miranda, Vice President of Pergamon, when the Pergamon group was there a couple of weeks ago, who said he would take it under consideration. Katz will call Miranda tomorrow and let me know on Friday. He will ask Miranda to call me so that I can act as intermediary. I asked him how the search for a new Director is coming. He said that there is much talk of a young man from the Lawrence Livermore Lab (actually, he is from Davis)--Harold Smith--as the leading candidate. He asked that I give him a suggestion when he calls me on Friday.

Sam Markowitz came in at 4:00 p.m. to present his case for keeping the helium-3 cyclotron going to me and Earl Hyde. I sent off a large number of pictures and letters to my relatives in Sweden.

I took a hike with Suki to the water tank. From 7:30-10:00 p.m., I attended a meeting of the East Bay Regional Park District Citizens Task Force at the EBRPD headquarters on Skyline Boulevard in Oakland. The agenda (copy attached) was followed. The main action was the appointment by Chairman Bort of a committee, with Ann Kristofferson as chairperson, to meet with the Overview people to work out a better method of cooperation between the Citizens Task Force and Overview. In particular, it will try to work out the creation of more subcommittees of the task force to study and make recommendations in a number of areas.

U. S. A.

October 10, 1972

Dr. Francis Perrin  
College de France  
11 Place M. Berthelot 75  
Paris, France

Dear Francis:

We at Berkeley have been fascinated to read in the popular press about your evidence for a natural chain reaction in uranium that might have occurred in Gabon.

Could you send us some more detailed information concerning the evidence for this. We are particularly interested in the range of concentrations of  $U^{235}$  that have been observed and in the isotopic composition of the rare earths that have been found, but we are interested in all other relevant information as well. Was any  $U^{236}$  detected in any of the samples? Have any plans been made to look for plutonium-239 and neptunium-237, and changed isotopic compositions of other elements besides rare earths?

If you have copies available, I would greatly appreciate receiving the reports which you gave to the French Academy of Sciences.

I am enjoying my return to academic life at Berkeley. I trust that you also are enjoying your present status.

With warm regards,

Cordially,

Glenn T. Seaborg

GTS/sms





## EAST BAY REGIONAL PARK DISTRICT

11500 SKYLINE BOULEVARD/OAKLAND, CALIFORNIA 94619/TELEPHONE (415) 531-9300

BOARD OF DIRECTORS: FRED C. BLUMBERG, President; MARLIN W. HALEY, Vice President; PAUL J. BADGER, Treasurer  
PAUL E. HARBERTS, Secretary; JOHN A. MACDONALD, CLYDE R. WOOLRIDGE, DR. HOWARD L. COGSWELL □ RICHARD C. TRUDEAU, General Manager

### CITIZEN'S TASK FORCE MEETING NOTICE AND AGENDA

Date: Wednesday, October 11, 1972

Place: East Bay Regional Park District, 11500 Skyline Boulevard, Oakland.

#### AGENDA

1. OVERVIEW report - classification system.
2. Sub-committee report (interim) - non-traditional roles, Susan Watson.
3. Criteria Report  
Because of the limited time for Task Force review at the last meeting, Chairman Bort has suggested we re-open the discussion relative to criteria.
4. General Discussion  
Chairman Bort suggests that the Task Force has now been operating long enough that we should have a general discussion as to how we can best proceed and be most effective in accomplishing the goals of the Task Force. Please come prepared to discuss your thoughts and ideas.

NOTE: The following schedule of future meetings was adopted by the Task Force at its' last meeting:

1. Las Trampas - Field trip, Saturday October 14, 1972, 9:30 A.M. to 4:00 P  
family members welcome, bring your lunch.  
PLEASE ADVISE IF YOU ARE ATTENDING.
2. Coyote Hills/Hayward Shoreline, Saturday, October 28, 1972, 9:30 A.M.
3. Regular - Wednesday, November 8, .972, 7:30 P.M.
4. Regular - Wednesday, December 6, 1972, 7:30 P.M.
5. Regular - January 10, 1973, 7:30 P.M.
6. Regular - February 14, 1973, 7:30 P.M.

Thursday, October 12, 1972 - Berkeley - Sacramento - Davis

Lew Keller called me from Oak Ridge at 8:45 a.m. to say that he didn't have any additional comments on my Copernican article but was sending me some copies covering the chemistry of thallium(I). I told him that we have talked it over here and have no problem with his inviting Mikheev to work at Oak Ridge instead of Berkeley. We both agreed that putting a milligram of curium-248 at Dubna for the use of Silva would not be wise.

At 9:30 a.m., I attended the regular research progress meeting of the SuperHILAC group. I gave the first talk, showing my super-8 movies of GSI and color slides of the GSI and University of Mainz groups. Ken Mirk next described the current state of problems in getting the SuperHILAC operating; a pressure problem (due to a mistaken valve opening) has led to pressures in the post stripper tank that seriously changed the positions of the diaphragms. Ghiorso described insulation problems in the ion sources.

I left the meeting to drive to Sacramento at 10:30 a.m. I went to the Martinique Room of the Sacramento Inn, for my scheduled talk at the Comstock Club. At the head table were: Dr. Ferd Kiesel (Comstock Club Vice President), Mr. W. Earl Sams (Chairman of the Day, State Dept. of Education Consultant), Mr. Ed Combatalade (Public Relations Director, SMUD), Paul Clifton (Projects Coordinator, State of California), Alfred Whatley (Executive Director, Western Interstate Nuclear Board, Colorado), Paul Henry (Comstock Club Membership Committee, District Manager, Pacific Telephone), Colonel A. G. Texley (Comstock Club Program Committee, Retired Air Force), and Dr. Franklin Yee (immediate past President). Combatalade gave me a pair of cufflinks and tie clip depicting the Rancho Seco Cooling Towers.

I gave my talk, "The Other Atom," for 30 minutes, which was followed by 15 minutes of questions--all televised by Channel 10 of Sacramento. As I began my talk, I suggested that any late reports on the final playoff game between the Oakland A's and Detroit Tigers which was going on at that time in Detroit be announced by interrupting my talk. At the end of the talk, during the question period, I asked what the score of the game was and learned that Oakland had won 2-1 and hence had won the American League pennant.

After the talk, I was interviewed by Bob Russell of Sacramento Channel 13; Judy Phillips, who identified herself as a citizen, also participated in the questioning, which was largely on the safety of nuclear power, the emergency core cooling hearings that are now in progress, the French discovery of the natural chain reaction in Gabon, and so forth.

On the way home, I stopped in Davis and visited the house that Steve is renting on Duke Drive. No one was home except the dogs. I then drove by Struve Hall on the campus where I found Eric on the third floor. He introduced me to his roommates Dave Brandenburg and Ron Frick. They are temporarily living in a storeroom.

I took a hike to the water tank with Suki.

Friday, October 13, 1972 - Berkeley

Joyce Burr called me at 8:45 a.m. with the news that the EBRPD had succeeded in buying 1,000 acres at Point Pinole and that this will be announced today. She was concerned that the role of Mary Jefferds, Jean Siri, Ralph Warner, Douglas Corbin, and others of the Point Pinole Committee be recognized as well as the role of John Nejedly and Assemblyman John Knox.

I conferred with Liljenzin and Kratz in their lab about their work and the recent altercation with Moretto and Thompson in which they preemptorily removed their pulse analyzer (which had been on long-term loan from the Thompson group).

The Program Committee held a bag-lunch meeting in my office from 12:00-1:00 p.m. Present were Cerny, Diamond, Ghiorso, Glendenning, Harvey, Hollander, Hyde, Poskanzer, Shirley, Street, Templeton, and Thompson. Earl reported that the Miller Fellowships have announced openings for the coming year and suggested that the group urge qualified people to apply, since this would be a potential funding supplement. He, Templeton, Shirley, and Gertrude Steel recently talked with George Pappas and Ed Pollak to discuss the accounting system which has been the basis for imbalanced support provisions. They agreed to split the old 9301 account into seven new accounts (copy attached). The committee discussed the ramifications of the new system and agreed that we would experiment with it for a while.

Joe Cerny discussed the Table of Isotopes budget. The review committee unanimously recommended that the Table continue this year but be reviewed thoroughly as to continued operation in FY74. The committee recommended that this year's level be increased by \$20,000; even so, they will have to cut back on staff. Hollander said he would circulate copies of his letter to the Division of Biology and Medicine; Cerny will append his notes on the review committee's meeting to provide a file record for us.

Arthur Poskanzer summarized the deliberations of the ad hoc committee appointed last week (Harvey, Poskanzer, Hyde, Michel, Clark, and Markowitz) to discuss the helium-3 cyclotron. Clark reported that the basic design is too small to ever make it a reliable machine. It will be 6-12 months before it will operate and, when it is running, it will require a half- to full-time person to operate it. The committee voted to cut off the helium-3 cyclotron; Sam's trying to appeal it. The committee discussed whether this would torpedo Markowitz's research program; we decided that everything he is doing can be done on the other machines, e.g., the 88" cyclotron, providing he can get some cooperation in scheduling. Harvey indicated that the Markowitz group has received everything they have asked for and expects this will continue. It was agreed that Earl will give the notice to Jay Weidenfeld and I will tell Markowitz about this decision.

Earl went down the budget item by item, pointing towards what presently appears to be a \$100,000-125,000 overrun for FY73. He reported that Pappas was going to Washington this week; he previously understood that we would be receiving an additional 1-2% cut. It is hoped that we will know early next week.

## PAYROLL ACCOUNTS - NUCLEAR CHEMISTRY

Present Set

9301 General  
 9302 Hilac  
 9303 88-inch Cyclotron  
 9304 GSRAs, Chemistry

Proposed Set

Designation		Salary Range		Approx. no. Employees
9301	General	\$ 522 - 780	Office Staff Research Assoc.	18
9302	SuperHILAC			
9303	88-inch Cyclotron			
9304	GSRAs, Chemistry			
9305	Research 1	780 - 1000	P3/P4, mostly; AE-3	13
9306	Research 2	1000 - 1250	P5/P6, mostly	40
9307	Research 3	1250 - 1650	P7	20
9308	Research 4	1650 - 2250	P8	22
9309	Research 5	2250 - 2750	Some P9, some P10	8
9310	Research 6	2750 - ∞	Some P9, some P10	few

I informed the group that the President of the Soviet Academy of Sciences, M. V. Keldysh, will be here on October 24. I asked for ideas on what we might show him.

I attended the regular Friday meeting of Chemistry 1A instructors and teaching assistants in Room 406 Latimer Hall from 1:10-2:00 p.m. I went down to Shattuck Avenue for a haircut at the Palace Barber Shop, then on the way back up the hill to LBL, I stopped by Dave's office-lab (4591 Life Sciences Building). He wasn't in since he was teaching his Biology 1A lab section at the time.

I called Ned Birdsall in regard to his draft memorandum of August 15 on Energy Resources Research and Development, to tell him he has erroneous information on the AEC labs, their functioning, and rate of expenditure on energy research. He appreciated getting this information. He told me about the present status of the Energy Resources Group on the campus and that Mark Christensen might create a faculty committee within a few days. He also told me about the Interdisciplinary Design Group which meets every week under the leadership of Professor Arnold Schultz of Forestry. We also discussed John Holdren, who might be put on the faculty as an Assistant Professor sometime between next March and July--half in Electrical Engineering and half with the new Energy and Resources Interdisciplinary Group. I said I would like to talk with Holdren on his next visit to the campus, and Birdsall said he would arrange this.

I called on Vice Chancellor Mark Christensen to ask that he arrange an appointment for me, Jack Hollander and Andy Sessler, with him and the Chancellor to discuss our program at LBL on Energy and Environment. He said that he will do so. I also indicated an interest in being sure that there is LBL involvement in the Energy and Resources Interdisciplinary Group which is being organized on the campus through the efforts of Professor Birdsall. He indicated that at the first meeting of the group, he will call attention to this request. I also told him of our interest in becoming better acquainted with John Holdren, prospective key person in this group, in order to assure ourselves of his objectivity toward all sources of energy.

Owen Chamberlain called me in connection with the visit of Keldysh on October 24. He wants to discuss a problem (connected with the Levitch matter, I presume) with him. I suggested that the best time to do this would be during the tour of the Bevatron; he agreed to keep this low key.

I took a hike with Suki to the water tank, then had a TV dinner with Dianne. In the late afternoon, Helen drove to Davis to pick up Steve and Eric who spent the night here.

Saturday, October 14, 1972 - Lafayette

We watched on television the first World Series game from Cincinnati. Oakland won, 3-2. Steve went to Berkeley with Ron and some other friends. He spent the night at Ron's.

Eric and I took a hike in Briones Regional Park. We hiked up to Black Oak Knob on the Briones Crest and back via Briones Valley Road;

Helen drove us to and from the Park because Dave had the Pontiac and she needed the Volvo.

Walter Berl of AAAS came by with his 19-year-old daughter Cathy (a student at the San Francisco Art Institute) from 5-6:30 p.m. to discuss progress on the AAAS-CONACYT meeting in Mexico City next year.

Sunday, October 15, 1972 - Lafayette

I watched part of the second World Series game--Oakland won, 2-1.

Helen, Eric, our neighbor Cathy Sherman, and I went to Candlestick Park to see the San Francisco 49ers-New York Giants football game. The Giants won, 23-17.

Suki and I took a hike to the water tank. Steve returned to Davis with a friend; Helen drove Eric back after dinner.

Monday, October 16, 1972 - Berkeley

I attended Pimentel's Chem 1A lecture, then went up to my office on the hill to read my mail.

Joe Katz called me from Argonne at 10:35 a.m. He had just talked with Miranda of Pergamon Press and received a copy of Robert Maxwell's letter to Mikheev, indicating that they will publish the papers of the Symposium on the Chemistry of the Transuranium Elements, and spelling out the conditions. We agreed that the question of whether we want this as a regular or supplementary issue of JINC is ours to decide. Regarding the translations from Russian to English, necessary because the Press doesn't have the typesetting facility to handle more than English, French or German, I indicated that I thought Mikheev had said they would handle this.

I went back down to Latimer Hall to hold my office hour in Room 446 from 11:00 a.m. to noon. I had lunch with the Chemistry Department faculty in the Howard Room of the Faculty Club, then taught my Chem 1A section in Room C. We gave them the first quiz of the quarter (copy attached).

I then walked back up to my office, checked my mail, conferred with Nurmia about his long-delayed article for the Gmelin volume, and went to the seminar in the Building 70A Conference Room, where Fred Becchetti spoke on "Heavy Ion Reactions at High Energies."

I mailed to Harold Fidler the Foreign Travel Report, concerning my September trip to Germany, the Soviet Union and Sweden (copy attached).

When I arrived home, our gardener Lloyd Rudholm was there and Helen and I conferred with him about the trees and plants he will plant in our yard this fall and winter. Suki and I took a hike, after dark, to the water tank.

Helen, Dianne and I watched on television the second half of the Green Bay Packers-Detroit Lions football game; Green Bay won, 24-23.

- (1) 22.4 liters of NO gas at 1 atm and 0°C are found to react completely with 22.4 liters of O<sub>3</sub> gas at 1 atm and 0°C to form NO<sub>2</sub> and O<sub>2</sub> gases.
- How many grams of NO<sub>2</sub> are produced?
  - What volume would this amount of NO<sub>2</sub> occupy at 1 atm and 0°C?
  - What volume would the NO<sub>2</sub> occupy at 0.5 atm and 25°C?
- (2) After a mixture of N<sub>2</sub> and O<sub>2</sub> is passed through an electric arc to form NO, measurements indicate that the amount of N<sub>2</sub> consumed would occupy 22.4 liters measured at 0°C and 1 atm.
- What volume of O<sub>2</sub> measured at 0°C and 1 atm must have been consumed?
  - What weight of NO in grams was formed and what volume would this NO gas occupy at 25°C and 1 atm?
- (3) A series of measurements of a volume yields the values 130.52, 130.72, 130.47, and 130.37 cc.
- What is the average value and what is the average deviation?
  - Express the average value ± the average deviation in exponential notation.
  - What would be the percent change in volume if it were increased or decreased by an amount equal to the average deviation?
- (4) 50 cc of 2M H<sub>2</sub>SO<sub>4</sub> is found to react with 50 cc of 4M NaOH.
- How many moles of H<sub>2</sub>SO<sub>4</sub> have reacted and how many moles of NaOH have reacted?
  - If 450 cc of water were added to 50 cc of 2M H<sub>2</sub>SO<sub>4</sub>, what would the concentration of H<sub>2</sub>SO<sub>4</sub> be in the final solution? How many moles of H<sub>2</sub>SO<sub>4</sub> would be in the final solution?
- (5) In one experiment, 0.243 grams of magnesium metal is found to weigh 0.402 grams after reaction with oxygen. In another experiment, 0.242 grams of magnesium is found to weigh 0.404 grams after reaction with oxygen.
- How many moles of oxygen atoms were found to react with a mole of magnesium atoms in each of the experiments?
  - What is the percent difference between the two values?

October 16, 1972

TO: Dr. Harold A. Fidler

RE: Foreign Travel Report -- Glenn T. Seaborg

August 31 - September 1, 1972

I flew from New York to Frankfurt, Germany, on August 31, 1972. I visited Gesellschaft für Schwerionenforschung (GSI), on September 1, 1972, in nearby Darmstadt. Here I was shown the work in progress on UNILAC, the heavy ion linear accelerator, which is under construction, and which will accelerate all heavy ions up to uranium to energies of 10 Mev per nucleon. I saw the design work and work on accelerator components taking place at the temporary headquarters at Wixhausen, which is about a kilometer away from the site of the accelerator itself. I saw here the 1/33rd scale model of the UNILAC.

I toured the site where the UNILAC will be installed and where the huge building to house the UNILAC and the associated buildings for the research program are under construction. I was told that the total cost of the UNILAC, the buildings, and associated equipment will come to about \$60 million. The UNILAC is scheduled for completion by early 1975 and should be an extraordinary machine. It is being constructed with the typical German thoroughness, will have two 350 Kv sources, a Wideroe pre-stripper section, a stripper area, and an Alvarez post-stripper section.

During the course of the visit I conferred with Christoph Schmelzer (Chairman, Board of Directors of GSI), Hans Otto Schuff (Administrative and Finance Officer, GSI), Peter Armbruster, Rudolf Bock, and Günter Herrmann (scientific members of the Board of Directors, GSI), and in the course of the discussions we explored the possibility of increased cooperation between GSI and the heavy ion research group at the Lawrence Berkeley Laboratory. In these discussions we were joined by H. Klein (Ministry of Education and Science in Bonn).

In the late afternoon I gave a talk on "A Status Report of the Transuranium Elements" in the conference room of the provisional GSI quarters at Wixhausen.



Dr. Harold A. Fidler

- 2 -

October 16, 1972

September 2, 1972

I visited the reactor building at the University of Mainz with Günter Herrmann as my host. Here I met Peter Dittner of Oak Ridge National Laboratory, who is there with his family on a year's leave of absence from ORNL. Herrmann and his large group of resident scientists and graduate students gave me a complete briefing on their research program at their 100 KW Triga Reactor. This included a description of their impressive methods for the very rapid (of the order of a few seconds) chemical methods for the extraction of the fission products of uranium, including demonstrations of some of these methods. They are working on some 50 isotopes determining the decay properties, methods of separation, and so forth. They have under development, in connection with GSI, a mass separator to be used for the mass number identification of radioactive isotopes.

September 3, 1972

I flew from Frankfurt to Moscow.

September 4-8, 1972

I attended the Symposium on the Chemistry of the Transuranium Elements held at the Institute of Physical Chemistry, of which Viktor I. Spitsyn is Director. Here I gave three papers: (1) in memory of Burris B. Cunningham; (2) "A Status Report on the Transuranium Elements"; and (3) "The Transuranium Elements and Mendeleev's Periodic Table." This was an interesting symposium, well worth attending, and included about ten participants from the United States (O. L. Keller, J. R. Peterson, R. A. Penneman, E. K. Hulet, R. D. Baybarz, D. Cohen, L. J. Nugant, J. Waber, J. Burnett, and myself), a comparable number from Western European and Eastern European countries, and a large number from the Soviet Union.

I believe that the papers by the U.S. participants represented the most advanced and sophisticated work. However, the newest research result, from my point of view, was the report by N. B. Mikheev, V. I. Spitsyn, and co-workers, on the reduction of mandeleevium to the univalent state which they demonstrated by their co-crystallization procedures.

In the course of the week I also met with G. A. Arbatov, Director of the Institute of U.S. Studies, officials of the Soviet society Znanie [knowledge], and officials of the Soviet Academy of Sciences.

My discussions with Arbatov, in the Institute building, were quite wide-ranging, covering the general area of arms limitations and disarmament, and in the course of these he indicated that although he

Dr. Harold A. Fidler

- 3 -

October 16, 1972

was generally pleased by the results of the SALT talks, he was worried about certain aspects of attempts in the U.S. Senate to interpret the Interim Agreement covering offensive weapons in a manner which is unilaterally favorable to the United States. My talks with officials of Znanie, which took place at Znanie headquarters, were concerned with the implementation of an agreement for cooperation between Znanie and the AAAS, which I was representing in my capacity as President.

I met with M. V. Kaldysh, President of the Soviet Academy of Sciences, at the Academy headquarters. We discussed the program of cooperation between the United States and Soviet National Academies of Science, and he indicated that he hopes to visit the United States this fall. I also explored further with him, in my role as President of Science Service, the possibility of Soviet science students at the secondary school level participating in the annual U.S. Science Fair. He invited me, as a foreign member of the Soviet Academy of Sciences, to attend the observance of the Fiftieth Anniversary of the Soviet Union, to be held under the auspices of the Academy in Moscow at the end of November (November 28-30), 1972.

Mikheev and Spitsyn talked to me about the possibility of Mikheev spending a couple of months next spring at the SuperHILAC of the Lawrence Berkeley Laboratory to look for unusual high and low oxidation states using short-lived isotopes of elements 102, 103, and 104.

September 9, 1972

I visited the Dubna Laboratory, where I was given a complete briefing on the program on the transuranium elements, including super-heavy elements, by G. N. Plerov, Yu Ts. Oganessian, G. M. Ter-Akopyan, and others. They have made a long bombardment of uranium with xenon ions and have observed in the superheavy element fraction (a copper sulfide precipitate from acid solution with hydrogen sulfide) an activity which decays by spontaneous fission at the rate of one count per week. This spontaneous fission only emits two to three neutrons per fission, contrary to what is expected for a superheavy element. They are in the process of making a many weeks' long bombardment of uranium with xenon ions using their tandem cyclotron combination in an attempt to produce a sufficient quantity of this spontaneous fission activity so that its mass number can be determined in a mass separator and the energy of the spontaneous fission fragments can be measured in order to establish if it is indeed due to a superheavy element.

They have a massive program of search for superheavy elements in nature, including the counting of neutrons from the spontaneous fission of any element 114 that might be present in galena ores, the separation of lead from 100,000 gallons of geothermal water to look for element 114, search in large pulverized meteorite samples and in

Dr. Harold A. Fidler

- 4 -

October 16, 1972

cosmic rays to be detected in large plastic sheets on earth-orbiting satellites. I had the impression that the results so far are generally negative but their presentation was tinged with the tantalizing suggestion that maybe they were observing positive effects in some of their experiments.

They outlined experiments for the possible synthesis and identification of isotopes of elements 106, 107, and 109, to be produced through the bombardment of uranium and plutonium with  $\text{Si}^{30}$  and  $\text{P}^{31}$  ions. They indicated that they are also seriously considering using  $\text{Cm}^{246}$  as a target, making it possible to use lighter heavy ions as projectiles. This has the advantage of presumably higher yields, but the disadvantage of inevitably introducing alpha particle and spontaneous fission contamination into their chemical laboratories, which would be a serious price to pay in view of their attempts to measure extremely low counting rates.

September 10, 1972

I flew from Moscow to Stockholm.

September 11, 1972

I visited the Studsvik Laboratory of the Swedish Atomic Energy Company. Here, with Dr. Bo Aler, President of the Swedish Atomic Energy Company, I made a tour of the laboratory and was briefed on the Materials Testing Reactor R2, the OSIRIS (on-line isotope separator) project, the Pressurized High Temperature Critical Facility (KRITZ), the Concrete Pressure Vessel Model (BRM), the Laboratory for Chemistry and Corrosion, and the progress on environmental control and safety research.

I was impressed by Gösta Rudstam's OSIRIS, which is working very successfully on the mass separation and mass number identification of fission product isotopes and by his apparatus for the separation of various isotopes by making use of the differences in the volatilities of their compounds. I was also impressed by Rudstam's measurements, with Shlomo Shalev, on leave from Technion University in Israel, on the measurement of mono-energetic neutrons accompanying the decay of some fission product isotopes. (This uses the apparatus developed by Shalev, and was similar to work that I had seen at Mainz University on September 2.)

September 12, 1972

I gave the Studsvik lecture, "A Status Report on the Transuranium Elements," in the auditorium of the Studsvik Laboratory. Present for this were a number of my Swedish friends who had spent some time with me working at the Lawrence Radiation Laboratory in Berkeley--Jan Rydberg (at Berkeley in 1948), Lennart Holm (1956), Gösta Rudstam (1950), and

Dr. Harold A. Fidler

- 5 -

October 16, 1972

Wilhelm Forsling. Also among those present were Erik Rudberg, Permanent Secretary of the Swedish Academy of Sciences, and O. Ginstedt, President, Oskarshamnsverkets Kraftgrupp (he signed the first agreement that the U.S. had with a foreign country for toll enrichment, at a ceremony in Washington some five years ago).

September 13, 1972

I attended a regularly scheduled meeting of the Swedish Academy of Sciences in my capacity as a foreign member of the Academy. At the supper following the meeting I had the opportunity to talk further with Rudberg and to meet Carl Gustaf Bernhard, the President of the Academy and who will replace Rudberg as Permanent Secretary on January 1, 1973.

September 14, 1972

I flew to Frankfurt and again visited the GSI to continue discussions concerning increased collaboration between GSI and the heavy ion research program at the SuperHILAC at the Lawrence Berkeley Laboratory.

September 15, 1972

I flew back to the United States and home.

Glenn T. Seaborg  
Nuclear Chemistry Division

GTS/ssk

Attachments: (2)

List of Persons Consulted  
Program of the Symposium on the Chemistry  
of the Transuranium Elements

PERSONS CONSULTED  
Foreign Travel Report -- Glenn T. Seaborg

August 31, September 1 and 14, 1972: West Germany  
Gesellschaft für Schwerionenforschung (GSI), Darmstadt

Helmut Ahrens, Assistant at GSI  
 Norbert Angert, Head, Ion Sources Department, UNILAC Group  
 Peter Armbruster, Scientific Member, Board of Directors  
 Rudolf Bock, Scientific Member, Board of Directors  
 Hans Floeter, Head, Construction Department  
 Burkhardt Fricke  
 Günter Herrmann, Scientific Member, Board of Directors, and Director,  
 Institute of Inorganic and Nuclear Chemistry, University of Mainz  
 H. Klein, Ministry of Education and Science, Bonn  
 Rolf W. Mueller, Head, Structures Department, UNILAC Group  
 Tomasz Niewodniczanski, Head, Technical Department, UNILAC Group  
 Christoph Schmelzer, Chairman, Board of Directors  
 Hans Otto Schuff, Administrative and Finance Officer  
 Gard Soff, Graduate student  
 Norbert Trautmann, University of Mainz

September 2, 1972  
University of Mainz, Germany

Helmut Ahrens  
 Peter Armbruster  
 Rudolf Bock  
 Peter Dittner, Oak Ridge National Laboratory, on leave of absence from ORNL  
 Günter Herrmann  
 W. Lauppe  
 E. Roekle, GSI  
 Fritz Strassmann  
 Norbert Trautmann

Graduate Students and Senior Scientists:

W. Brüche  
 K. Chayawattanankur  
 R. Denig  
 H. O. Danschlag  
 H. Folger  
 G. Franz  
 H. Franz  
 W. Grimm  
 W. Herzog  
 N. Kaffrell  
 G. Klein

## Persons Consulted

2

## Graduate Students and Senior Scientists (cont'd)

J. V. Kratz  
 Karl Ludwig Kratz  
 H. Menke  
 R. Naumann  
 K. E. Seyb  
 G. Tittel  
 M. Weber

September 3-8, 1972: Moscow, USSR

Symposium on the Chemistry of the Transuranium Elements, Institute of Physical Chemistry (see attached program for complete list)

I. Alimarin, Moscow University

V. Z. Belov

R. Berger, France

M. K. Chimutova, Institute of Geochemistry and Analytical Chemistry

G. N. Flerov, Director, Laboratory of Nuclear Reactions, Dubna

L. I. Guseva, Institute of Geochemistry and Analytical Chemistry

Michael E. A. Hussonnois, Orsay, currently working at Dubna

Yury Ivanovitch Kapshaninoff, Scientific Secretary, Symposium on the Chemistry of the Transuranium Elements; Institute of Physical Chemistry

Cornelius Keller

G. Koch, Karlsruhe Laboratory

Yury Mikhailovitch Kuyumgee, Administrative Assistant to Viktor Spitsyn

Nicolai Maryashkin, Computer Center, Soviet Academy of Sciences

(interpreter)

N. B. Mikheev

B. F. Myasoedov, Institute of Geochemistry and Analytical Chemistry

A. A. Nesmeyanov

B. P. Nikolsky

Yu Ts. Oganessian, Head, Physics Division, Dubna

Mikhail Valeryevitch Pospeloff, Organic Synthesis Institute (interpreter)

Viktor I. Spitsyn, Director, Institute of Physical Chemistry

M. A. Startsev, Deputy Director, Institute of Physical Chemistry

D. N. Sugulobov, Radium Institute, Leningrad

Andre Zaharov, Institute of Physical Chemistry

Yu. A. Zolotov, Assistant Director, Vernadsky Institute of Geochemistry and Analytical Chemistry, in charge of Analytical Chemistry; deputy to A. P. Vinogradov

September 6, 1972: Moscow

Institute of U.S. Studies

G. A. Arbatov, Director

Vladimir Krestianov, Scientific Secretary

## Persons Consulted

3

September 7, 1972: Moscow

Znanie Society (Soviet All-Union Society "Knowledge")

Vitalii Goldanskii, Vice President for Natural Sciences

Vladimir Maslin, Vice President

Kirsanov Sergei, Chief, International Department

September 8, 1972: Moscow

Soviet Academy of Sciences

M. V. Keldysh, President

S. G. Korneyev, Chief, Foreign Department

M. A. Markov, Academician-Secretary

G. K. Skryabin, Executive Scientific Secretary

Viktor I. Spitsyn

Peter A. Vares, Senior Adviser, Foreign Department

September 9, 1972: Dubna

Dubna Joint Institute for Nuclear Research

V. S. Barashenkov

V. Z. Belov

Bernd Eichler, Dresden Nuclear Laboratory

G. N. Flerov

Michael E. A. Hussonnois

E. M. Kolesov, International Department

L. V. Kulikova

Mikhail M. Lebedenko, Chief, Publishing Department

Nicolai Maryashkin

Alexandru Michul, Vice Director, JINR

N. B. Mikhaev

Yu Ts. Oganessian

V. P. Sarantsev, designer and builder of "Smoketron"

G. M. Ter-Akopyan

September 11, 1972: Stockholm, Sweden

Nobel HouseSam Nilsson, Executive Secretary, International Federation of  
Institutes for Advanced Study

September 11, 1972: Studsvik

Studsvik Laboratory

Bo Aler, President, Swedish Atomic Energy Company

Carl Gustav Bernhard, President, Swedish Academy of Sciences

## Persons Consulted

4

September 11, 1972: Studsvik (cont'd)

Lars Carlbom, Swedish Environmental Control and Safety Research Program;  
 Head, Safety and Operations Department, Swedish Atomic Energy Company  
 Wilhelm Forsling, Research Institute of Nuclear Physics  
 O. Gimstedt, President, Oskarshamnsverkets Kraftgrupp  
 Lennart Holm, Research Institute of National Defense  
 Walter Hübner, Laboratory for Chemistry and Corrosion  
 Hilding Mogard  
 Ragnar Nilson, Vice President, Swedish Atomic Energy Company  
 Lars-Åke Nöjd, Vice President, Swedish Atomic Energy Company  
 Rolf Pauli  
 Erik Rudberg, Permanent Secretary, The Swedish Royal Academy of Sciences  
 Gösta Rudstam, Professor and Head, Studsvik Laboratory of Swedish  
 National Research Council  
 Jan Rydberg, Chalmers Institute of Technology  
 Kristian Saltvedt, in charge of Materials Testing Reactor R2  
 Sten Sandström  
 Shlomo Shalev, long-term visitor from Technion University, Israel  
 Göran Thorén, Swedish Environmental Control and Safety Research Program

September 11, 1972: Nyköping  
Dinner, Nyköping Hus

Bo Aler  
 Lars Carlbom  
 Göran Carleson  
 Mats Lemne  
 Peter Margen  
 Ragnar Nilson  
 Lars-Åke Nöjd  
 C-G. Osterlundh, Head, Materials and Fuels Department, Swedish  
 Atomic Energy Company  
 Rolf Pauli  
 Gösta Rudstam  
 Sten Sandström  
 Evelyn Sokolowski  
 Tor Wiedling

September 12, 1972: Studsvik  
Luncheon, Studsvik Hotel

Bo Aler  
 Olof Bloom  
 Eivar Bloom  
 Lars Carlbom  
 Henri Condé, Research Institute of National Defense



## Persons Consulted

5

September 12, 1972: Studsvik (cont'd)

Lennart Devell, Safety and Operations Department, Swedish Atomic  
Energy Company  
Göran Ekberg, President, South Swedish Power Co., Ltd.  
Wilhelm Forsling  
O. Gimstedt  
Lennart Holm  
Alf Larsson, Ministry of Industry  
Börje Larsson, Gustav Werner Institute  
Ragnar Nilson  
Lars-Åke Nöjd  
C-G. Osterlundh  
M. O. Ottosson, Swedish Atomic Research Council  
Erik Rudberg  
Gösta Rudstam  
Jan Rydberg  
Nils Ryde, Chalmers Institute of Technology  
Bengt Samuelsson, Swedish Natural Sciences Research Council  
Hakan Sterky, Stockholm  
Tibell, University of Uppsala

September 13, 1972: Stockholm  
Swedish Royal Academy of Sciences Meeting

Carl Gustaf Bernhard  
Stig Claesson  
Crawford, Swedish Ambassador to Kenya  
Arne Fredga, Chairman, Committee for the Nobel Chemistry Prize  
Gunnar Hägg  
Erik Rudberg  
Olof Tandberg, Head, International Affairs  
Carl Gustav Wahlquist, Head, Stockholm Port Authority

I spent the remainder of the evening, as usual, reading office papers, articles, etc.

Tuesday, October 17, 1972 - Berkeley

I met with the SuperHILAC Planning Group at 8:45 a.m. Present were Ghiorso, Nitschke, Nurmia, and the Alonsos. We discussed the present status of the SuperHILAC, which is still somewhat discouraging.

From 10:30-11:45 a.m., I met with Dr. George H. Milly, President of GEOMET, Inc. to explore the possibility of my joining the Board of GEOMET. He told me that, of the two outside Board members, Robert Lessard will probably terminate soon, whereas Ed Ackerman is continuing. As prospective outside members, he mentioned William E. McGuirk (Chairman, American Mercantile Trust Company, Baltimore) and James O'Leary of U.S. Trust in New York. He said that he will give me some names that I might contact as references for GEOMET. We discussed the value of the 4,000 shares that I might obtain under a stock option purchase agreement or straight purchase. The Board has fixed the current fair market value as \$10 per share. Since about 1,200,000 shares have been issued, the total worth of the company is about \$12 million. An additional 200,000 shares have been authorized which will probably go as a public offering in mid-1973. If I choose the stock option purchase, it would have to be exercised between two and five years from now, at which time I would pay the present value per share (i.e., the value at the time that I become affiliated with the company as a Board member). Direct purchase would mean paying for the stock at the time of purchase. He said he didn't know of any hidden problems with the company that might embarrass me and there would be no press release about my joining. He said that on the basis of the new drilling this summer in the property of GEOMET Mining and Exploration Company (a subsidiary of GEOMET) on the Crooks Gap property in Wyoming, they estimate a total of 5-10 million pounds of uranium in the deposit. We left it that I might check some of the references and then get in touch with him about visiting GEOMET headquarters in Rockville, Maryland sometime during the week of November 12 when I will be in Washington.

Tom Bowman called. He said he has finally reached Jack Rogers upon the latter's return from vacation in Ireland. Tom asked him for an explanation of the hold-up on the EBMUD acquisition of the Huckleberry Trail area. Rogers told him that the problem is Ned Robinson, the attorney for the owners, who was exercised every conceivable delaying technique, apparently in the hope of increasing the purchase price with the passage of time. We agreed that Rogers would call Robinson and tell him that we and many others are becoming pretty disgusted with his antics.

I had lunch at noon in the cafeteria with Dieter Bjerne, who is visiting here after his attendance at the Linear Accelerator Conference at Los Alamos last week, together with Melvin Klein, Hans Gutbrod, Albert Ghiorso, and Bob Main. It was entirely a social occasion, with indications that we will discuss the proposed GSI/LBL cooperative arrangement tomorrow.

I wrote to Lawrence E. Spivak, the producer of Meet the Press, to send him my views on the show (copy attached).

Ted Slosek, from Karl Cohen's department at General Electric in Sunnyvale, came in to talk with me at 3:00 p.m. about the draft for my talk at the IEEE conference in December.

I called Mac Laetsch at the Lawrence Hall of Science and Cornelius Tobias to ask their assistance in the program for M. V. Keldysh on Tuesday, October 24. Laetsch will give him a thorough tour of LHS in the afternoon. He thinks the rock collection will be a natural and that Keldysh would enjoy some of their computer education facilities; there might be a class under way at the time. Tobias will meet us at the Bevatron between 10:00 and 10:30 a.m. to show him the medical cave area. He said they might set up some exhibits. Tobias indicated that he had met Dr. Keldysh on his last trip to the Soviet Union.

I drove to the Oakland Coliseum to see the Oakland Athletics-Cincinnati Reds World Series baseball game, but it was rained out, so I drove home and had dinner at the usual time.

Wednesday, October 18, 1972 - Berkeley

I attended Pimentel's Chem 1A lecture from 9:10-10:00 a.m. in the Physical Sciences Lecture Hall. At the beginning of the lecture, Professor Markowitz presented a copy of the centennial volume history of the University of California to Catherine Ivanoff (who took Chemistry 1B from me) in recognition of her standing as the top student in Chem 1C last spring quarter.

Lew Keller called me from Oak Ridge at 10:30 a.m. He said that he and Bob Silva have agreed that Silva should not spend his sabbatical at Dubna. Perhaps Kenneth Toth would be a good person to go to Dubna. They feel that Silva might better spend his time at Spitsyn's Institute of Physical Chemistry--a six-month period is envisaged. This would come under the Soviet and U.S. Academies of Sciences exchange agreement, and I agreed to serve as a reference for Silva. I agreed that there should be no problem with Silva bringing about  $10^9$  atoms of fermium-257 to the Institute to support his work there.

I called Leo Bustad at the Davis Radiobiology Laboratory at 11:00 a.m. in response to his letter of October 6 inviting me to speak at their new seminar on "Energy and Environment." I indicated that I couldn't do it this quarter. They will continue in the Winter Quarter; the spring is uncertain. I told him that, as a University Professor, I would be coming to Davis in the winter or spring. I suggested that I might give a lecture on the transuranium elements late in the afternoon, then possibly could meet with his seminar for a supper meeting or early evening session. He told me he has had contact with the Studsvik group doing the cost-benefit-risk study, headed by Ingmar Bergstrom, and thinks their report will be interesting.

I had lunch in my office, then went down to the campus to teach my Chem 1A section in Room F.

October 17, 1972

Mr. Lawrence E. Spivak, Producer  
MEET THE PRESS  
2660 Woodley Road, N.W.  
Washington, D.C. 20008

Dear Larry:

I am pleased to respond to your request for my views about MEET THE PRESS.

As a long-time viewer and as a participant, I have found MEET THE PRESS to be stimulating and provocative--undoubtedly the best of the national press interview programs. You and your chosen colleagues have a great record of asking the most probing and topical questions. I know from my firsthand experience how hard you personally work in preparing for each program.

You have my permission to quote me if you wish.

Cordially,

Glenn T. Seaborg

GTS/sms

Darleane Hoffman called me from Los Alamos at 3:20 p.m. She won't be able to come to Berkeley on October 30-31 because of schedule conflicts, but will send Bill Daniels and Kurt Wolfsberg, both of whom are competent in heavy element chemistry as well as a mass separator process. We discussed Perrin's work in Gabon. I indicated that I've written for the firsthand data and will let her know if I get anything.

Mark Christensen called me at 4:15 p.m. He had received a call from Professor Leo Falicov of the Physics Department, who is in charge of the visit of about 15 Russian scientists to Berkeley next spring. Mark suggested that he be worked into Dr. Keldysh's program, which I said I would arrange.

In the late afternoon, I drove to the Oakland Coliseum where, starting at 5:30 p.m., I saw the 3rd World Series baseball game played between the A's and the Reds; Cincinnati won, 1-0. It was a well-played game--a pitchers' duel: Odom for the Athletics, Billingham for the Reds.

Thursday, October 19, 1972 - Berkeley - New York

I attended the regular meeting of the SuperHILAC Research Program at 9:30 a.m. Dieter Bjerne, the project director of the UNILAC at GSI, gave a status report on the UNILAC.

Helen then drove me to the San Francisco Airport where I boarded American Airlines Flight No. 16 which left at 12:15 p.m. and arrived at Kennedy Airport in New York at 8:10 p.m. I worked on Travels in the New World en route.

I took the Carey Airport bus into New York, then walked around the corner to the Chemists Club where I checked into Room 739. As I was registering, a call came from Sheila. She brought up a few points concerning travel plans, the Keldysh visit, etc. I went to the Club lounge and watched the last four innings of the fourth World Series game; Oakland won, 3-2, with a number of pinch hitters in the last of the ninth.

Friday, October 20, 1972 - New York - Washington

I had breakfast in the dining room of the Chemists Club, did some work on Travels in the New World in my room, and then took a taxi to the General Motors Building. Here I attended a meeting of the Board of Directors of the Dreyfus Third Century Fund, at 11:00 a.m., in the Board Room on the 35th floor. Present were: Howard Stein (Chairman), Clifford Alexander, Lucy Benson, David Burke, George Harrar, Sol Linowitz; and Michael Glass, David Bronheim, Margaret Evans, Leonard Leiman, Jeffrey Friedman, Jim Cunningham, Mike Taylor, Laura Parmer, and Laura Stofani (a new analyst).

We followed the agenda (agenda and minutes attached). During the discussion about the Petroleum Industry and whether to establish securities eligible for investment, the question of whether AMOCO's so-called lead-free gas should give them an advantage was raised. I said there is a question concerning the lower efficiency of such

## DREYFUS THIRD CENTURY FUND

Tentative Agenda  
October 20, 1972

1. Approval of Minutes Mr. Glass
2. INA Contract
3. Re-instatement Privilege
4. Sales Report Mr. Berkowitz
5. Consideration of Securities Eligible  
for Investment Mr. Bronheim
  - a. Updating of Insurance Industry
  - b. Special Consideration Companies
6. Review of Portfolio Mr. Stein
7. General Business Discussion

DRAFT

THE DREYFUS THIRD CENTURY FUND, INC.  
MINUTES OF REGULAR MEETING OF BOARD OF DIRECTORS

October 20, 1972

The sixth meeting of the Board of Directors of The Dreyfus Third Century Fund, Inc., a Delaware Corporation, was held on the 20th day of October, 1972, at eleven o'clock in the forenoon at 767 Fifth Avenue, Borough of Manhattan, City and State of New York, pursuant to notice given in accordance with the By-Laws. Present were the following Directors:

Clifford L. Alexander, Jr., Esq.  
Mrs. Lucy Wilson Benson  
Mr. David W. Burke  
Dr. J. George Harrar

Hon. Sol M. Linowitz  
Dr. Glenn T. Seaborg  
Mr. Howard Stein

constituting a quorum of the Board. Also present at the request of the Board were Mr. David Bronheim, Vice President of the Corporation; Michael A. Glass, Esq., Secretary of the Corporation; Leonard M. Leiman, Esq., of the firm of Reavis & McGrath, counsel to the Corporation; and members of the special research staff.

Mr. Stein acted as Chairman of the Meeting, and Mr. Glass served as Secretary of the Meeting to record the minutes thereof.

The Secretary presented for approval the minutes of the previous meeting held August 17, 1972. Each member of the Board having received a copy of these minutes, a reading was dispensed with and, after discussion, they were approved upon motion duly made, seconded and unanimously carried.

The Secretary reported that a filing was imminent by the Insurance Company of North America ("INA") with the Securities and Exchange Commission ("Commission") of an Application to permit the offering of shares of the Corporation under INA's Variable Annuity Program. According to INA's counsel, some delay in approval could be expected because the internal reorganization at the Commission had reassigned to other functions personnel familiar with INA and the Application.

The Secretary informed the Board that the Commission by Order had approved an Application filed by The Dreyfus Corporation on behalf of mutual funds it manages to offer to redeeming shareholders a one-time privilege to re-instate their account within 15 days of redemption. The Dreyfus Corporation

-2-

then applied to amend the Order to extend the 15-day period to 120 days. On behalf of the Corporation, the Board unanimously approved and ratified the filing of the aforesaid Application to amend the Order.

The Board then received a report on the sale of the Corporation's shares month-by-month and cumulatively. It was called to the Directors' attention that the Corporation is in position, unlike many other mutual funds, of having "net sales," with an excess of \$600,000 in sales over redemptions for the period of July 1st through September 30th.

The Board then passed to a consideration of the industry analyses for the selection of the securities of "ranked companies." At this point, members of the special research staff joined the meeting. Under the procedure previously established, the Board declared eligible for investment by the Corporation securities of companies as indicated below.

<u>Industry</u>	<u>Areas Determined Relevant</u>	<u>Cut-Off Line on over-all score*</u>
Petroleum	Equal Employment, Protection of the Environment, Occupational Health & Safety (equal weight)	47.4%**

Mr. Bronheim referred to that section of the Corporation's prospectus at page four which says, "The Board will periodically review the performance of companies... in order to determine whether previously ineligible companies then meet the overall level of performance which has been established for their industries or whether previously eligible companies have become ineligible. He then informed the Board that the review procedure had begun, explained how the updating of numerical data would be conducted, and that the order of review would generally be from the earliest of the companies examined to the latest.

<u>Industries Reviewed</u>	<u>Areas Determined Relevant</u>	<u>Cut-Off Line</u>	
		<u>Former</u>	<u>Rescored</u>
Insurance	Equal Employment (no change)	50.0% (5/26/72)	50.7%

[Effect of Review: one company formerly scoring 47.9% has moved above the cut-off line with a 57.7% score. The Board approved a company with a former score of 79.1% pending receipt of new data.]

\*expressed as a percentage derived by dividing a base score by the raw score received by the company.

\*\*The Board approved the inclusion of a company with a present score of 45.4% provided that on receipt of its OHS&S data, its score would be raised above 47.4%.



-3-

The Board then passed to consideration of several "technology companies." A company operating in the field of protection of the environment which produces equipment monitoring the emission of air pollutants at source was presented for approval. After discussion, the securities of this company were approved unanimously by the Board for purchase for the Corporation's portfolio.

In presenting a company operating in the health field the Chairman announced that a small amount of the stock of such company had been acquired by The Dreyfus Corporation in a private placement several years before the organization of the Corporation. A public offering of this company's shares was expected within a week, but The Dreyfus Corporation was not selling any of its shares. Because the company was deemed by the Board to be an important supplier of instruments and supplies used in the diagnosis of various organic disorders and in determining product purity, it was unanimously decided to approve the securities of the said company for purchase for the Corporation's portfolio upon receipt of an opinion of the Corporation's counsel that the purchase or later sale would create neither a conflict of interest between the Corporation and its investment advisor nor any problem under the securities law.\*

A general business discussion ensued and the Chairman discussed in particular the movement of funds for investment among the equity and bond markets, savings banks, and mutual funds. The Chairman also reviewed with the Board the portfolio of the Corporation, paying particular attention to the largest holdings therein and to those investments which had appreciated or depreciated the greatest in value.

Mr. Linowitz suggested that the companies the securities of which have been approved for purchase be so informed by letter. The letter should warn of possible adverse reaction if after publicizing their present status, their eligibility for the Fund's portfolio is revoked because of a relative decline in performance in the areas of special concern.

There being no further business, a motion for adjournment was duly made, seconded, and unanimously carried. The meeting was adjourned at three o'clock.

---

\* A written opinion of counsel was received on November 14, 1972.

gasoline leading to more oxides of nitrogen. I said I would look into this and report back to Bronheim.

Linowitz spoke to me about the DATRAN Board, which will meet around November 17; we set a luncheon appointment for 12:30 p.m. at the F Street Club on Wednesday, November 15. He said he will look into the GEOMET matter.

The whole group had lunch in the Board Room.

At 2:00 p.m., I received a call from Anne Keatley, Executive Secretary of the NAS Committee in charge of the coming visit of Red Chinese scientists to the U.S. (she was in Boston with the Chinese medical group). She invited me to be a member of the Committee (jointly sponsored by the FAS) and I accepted. The Committee is composed of Sheldon Atlas (Community College, Brooklyn), Dick Garwin, Marvin Goldberger, and Emil Smith (UCLA). The Committee, plus Harrison Brown, will have a conference phone call next Wednesday or Thursday morning to arrange the itinerary. They will be here from November 23 to about December 15 and will visit Berkeley around December 10-15. Shiing Chern of U.C. Berkeley has been to China and will help host the group.

I took a taxi to LaGuardia Airport and boarded an Eastern Airlines shuttle, leaving at 3:20 p.m. and arriving in Washington at 4:10 p.m. I took a taxi to Harrison Street. Pete was home and Jane came home from work at 6:30 p.m. I watched the last six innings of the fifth World Series game, which Cincinnati won, 5-4. Jane cooked dinner for Pete and me. I met Andrew Hartley, the roomer occupying the top bedroom in the house.

At 8:00 p.m., Jeremy Stone came by. We discussed my role in playing host for the Chinese delegation. He is ready to propose that I, together with Phil Morrison and Herb York, might constitute the next FAS delegation to China. We also discussed the possible split-off of the regulatory function from AEC; the FAS may come out in favor of this.

Saturday, October 21, 1972 - Washington

Pete took his pre-entrance general Law School exam this morning at American University. Jane cooked breakfast for us.

I took a taxi to AAAS headquarters to attend a meeting of the Board of Directors. Present were: Mina Rees, presiding, Leonard Rieser, Daniel Moynihan, William Golden, Caryl Haskins, Richard Bolt, David Blackwell, Phyllis Parkins, Lewis Branscomb; and William Bevan and Catherine Borrás. Ward Goodenough arrived a little late, then Richard Trumbull.

We followed the agenda (minutes attached). We adopted a resolution offering AAAS services to Congress in implementing the creation of its Office of Technology Assessment. We approved affiliation between the Scientific Manpower Commission and AAAS.

*Dr. Seaborg*

*301 Bd mtg Oct 72*

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE  
1515 Massachusetts Avenue, N.W.  
Washington, D. C., 20005

Minutes of the Meeting of the  
Board of Directors  
October 21 and 22, 1972

*approved gts 11/13/72*

*1000 10 ETS  
for approval  
11/15/72*

Present: Mina Rees, Chairman, David Blackwell, Richard H. Bolt, Lewis M. Branscomb, William T. Golden, Ward H. Goodenough, Caryl P. Haskins, Daniel P. Moynihan, Phyllis V. Parkins, Leonard M. Rieser, Glenn T. Seaborg, and William Bevan; from the staff, Richard Trumbull

Absent: Barry Commoner

MINUTES

1. Agenda Item 1. Executive Officer's Report.

(a) Personnel. Dr. Bevan announced three new staff appointments: Howard Greyber, Director of Meetings, on October 1; Graham Chedd (science editor of the New Scientist), Communications Department, on November 20; William Engelman, Director of Personnel, on December 1. Recruiting for the positions of controller and director of the Office of Opportunitites in Science is in process.

(b) Building project. Dr. Bevan reported that he had received a proposal from Donohoe Construction Company, was not happy with it, and had requested a more detailed version. A proposal has also been solicited from the consortium that built 1776 Massachusetts Avenue. Brookings Institution is now interested in selling their property at 18th and Massachusetts Avenue to AAAS, rather than renting it. The book value is estimated at \$1.4 million and the cost of remodeling at \$600,000. Brookings proposes to share their support services with AAAS. He has the impression that Harold Linder is not enthusiastic about the particulars of the proposal, but the staff will continue to review the possibility of an arrangement with Brookings.

(c) Finances. The report for the first nine months of the year, which was distributed at the meeting, indicates income of \$4,079,277, about \$14,000 below the budget estimate, and expenses of \$4,108,216, about \$95,000 below the budget estimate. The actual deficit for the nine months is \$29,000, in contrast to a budgeted deficit of \$111,000. An operating deficit of \$45,000 for the year is projected, if the unbudgeted costs of the AAAS membership-wide election and of the Mexico City planning are included. Expenses of the Mexico City Meeting are expected to total \$75,000 in 1972, and the cost of holding the election will be at least \$19,000.

A major expense in 1973 will be the cost of conversion from speedamat to computer. The new service will be provided by MISCO (McCall Information Service Company) at a cost of \$135,000 for the first year. Next year's budget will take account of increases in dues (\$2) and subscriptions (\$10, if allowed by the Price Control Board), effective in May.

- 2 -

(d) Contributions. In addition to the grants reported in Agenda Item 5 (a), the following contributions to the Mexico City Meeting are expected: \$10,000 from the World Bank, probably with a matching grant from the Inter-American Development Bank; \$10,000 from the Sloan Foundation; and \$5,000 from the Population Council. NIMH has expressed strong interest in a \$35,000 grant to support a project on institution building being developed by the Committee on Science in the Promotion of Human Welfare. For Youth Council projects, \$5,100 has been received from NIGMS and grants of \$1,000 from the Commonwealth Fund and \$3,000 from the Russell Sage Foundation are expected.

The dues card mailed to members this fall included a request for contributions to the programs of AAAS committees. The response has been gratifying, and donations totaling about \$5,000 are expected by the end of the year.

(e) Saturday Review. Dr. Bevan gave an account of the circumstances leading AAAS to bring joint suit with the publishers of Society magazine against Saturday Review, which we contend has been infringing on the copyrights of Science and of Society, respectively. Saturday Review has agreed to change the title of one of its four publications from Saturday Review/Science (with "Science" in larger letters and sometimes used alone) to Saturday Review of the Sciences (with all words given equal prominence). It appears that the suit may be settled out of court.

(f) Washington Meeting. Thanks to the excellent job being done by Richard Scribner and Philip Ritterbush, the annual meeting will be more coherent this year than in the past. There will be 152 symposium days, 80 of which will be devoted to interdisciplinary or general sessions. Five distinguished lecturers and five illustrated lectures will be presented. AAAS will sponsor four TV programs: one on genetics; one on space; one on the brain and the learning process; and one on prisons as a vehicle for discussing the role of science in society. In a Popular Exposition, various local agencies will have displays demonstrating their programs dealing with societal problems. Preregistration figures were distributed.

(g) International science. Messrs. Bevan, Golden and Rieser attended the British Association meeting in Leicester and were impressed by its lively character. They were pleased to learn that the BA had received a government grant and had moved to new quarters, and that Dr. Magnus Pike is to assume the duties of Secretary next year. Dr. Rieser had an interesting conversation with Dr. S. Bhagavantam, President-Elect of the Indian Science Congress, and Dr. Bevan has been in correspondence with the president of the Brazilian Association, who has been invited to visit AAAS this fall to discuss his interest in promoting an international association for the advancement of science.

Dr. Bevan, who had attended the inaugural meeting of the Colombian Association for the Advancement of Science earlier in October, reported on the good scientific quality of the meeting and the enthusiasm of the 200 participants.

2. Agenda Item 2. Minutes of the June 17-18 meeting were approved with the following corrections:

Minute 11, Security Procedures, Washington Meeting (page 5): In the third line from the bottom, change "of activism" to "for disruption." Revise the final sentence as follows: "Several members of the Board urged that great care be exercised in selecting chairmen of sessions and that the latter be given specific guidelines as to how to handle interruptions from the audience."

Minute 16, Financial Planning and Staff Projections for the Next Two years (page 8): Change the colon at the end of the third paragraph to a period and add the following parenthetical sentence: "(The Executive Officer pointed out that the amounts given below were first approximations and could change with a more careful evaluation of program costs.)" Page 10, lines 2-3: Change "in the first year" to "for the first year of operation."

3. Agenda Item 3. Executive Committee Actions. It was reported that since the June meeting, the Executive Committee had taken the following actions:

- (a) Approved the repurchase of the TIAA-CREF retirement contract of Mr. Isaac Smalls, a former employee.
- (b) Approved appointing Dr. Carl Swanson, Professor of Biology, University of Massachusetts, to complete the unexpired term of Elise Boulding on the Commission on Science Education.

4. Agenda Item 4. Interim Board Actions. It was reported that since the June meeting the Board had, by mail, approved extending the terms of the retiring secretaries of Sections A, C, I, M, N, O, P, and W by one year. In addition, the appointments of Dr. Dudley Shapere as Secretary of Section L for 1973 and of Dr. Ramon Bisque as Secretary of Section E for a regular four-year appointment, 1973-76, were approved.

5. Agenda Item 5. Information Items. The Board was informed of the following matters:

- (a) New Grants. Since the June meeting, the following grants have been received:

\$182,100 from the National Science Foundation to support the work of the Commission on Science Education through February 28, 1974.

\$622,595 from NSF for Chautauqua-Type Short Courses for College Teachers.

\$25,000 from the Rockefeller Foundation in support of planning for an Office of International Scientific Affairs.

\$5,000 from the Commonwealth Fund for the development of a project of the Committee on Science in the Promotion of Human Welfare, "Systematic Plan for Medical Science Education."

- 4 -

\$2,500 from the Asia Foundation to cover the costs of membership dues and publications for Asian scholars.

\$1,250 from the Population Council for publication of a special issue of "Science for Society: Educational Review."

\$5,000 from IBM in support of TV broadcasts, Washington meeting.

\$3,600 contributed by several organizations to the Local Committee, Washington meeting, for general purposes.

(b) AAAS-Znaniye Exchange of Lecturers. Dr. Mayor, who is handling this program, has had acceptances from the four American scientists invited to constitute the AAAS delegation: Melvin Calvin, University of California, Berkeley; Anton Lang, Atomic Energy Plant Research Laboratory, Michigan State University; David Grant, Department of Psychology, University of Wisconsin; and Frederick Doyle, U.S. Geological Survey. He has had no direct word from Znaniye about the Soviet delegation or about arrangements in the U.S.S.R. for the American visitors. However, Dr. Seaborg visited with officers of Znaniye this summer. His report was enclosed as Tab B of the agenda. At the meeting, he reported further on his conversations with Znaniye officers and suggested that the staff not be discouraged if prompt replies to letters are not received; he further suggested that letters be followed up by cable.

(c) Second Arden House Conference. Accommodations have been reserved at Arden House for three days, October 19-21, 1973. The date of the Council hearing on the issues to be taken up at the conference has been changed from December 27 to December 28.

6. Agenda Item 6. Future Meetings. The dates of December 9-10 and March 17-18, 1973, were confirmed for the next two meetings. It was agreed that the Board would meet in Mexico City on June 22, 1973, and at Arden House on October 21 (afternoon and evening) and 22, 1973, following the Second Arden House Conference, and that the Executive Committee might meet in advance of the Conference to handle some matters. It was further agreed that, starting with the December 1973 meeting, the Board would meet on Fridays (starting at 9:30) and Saturdays rather than on Saturdays and Sundays. The dates of December 7 and 8 were selected for the fourth 1973 meeting.

7. Agenda Item 7. Resolution from Committee on Science in the Promotion of Human Welfare. The following resolution adopted by the Committee on Science in the Promotion of Human Welfare at a meeting on September 30 was presented to the Board.

Whereas the Committee on Science in the Promotion of Human Welfare of the American Association for the Advancement of Science has had a long-standing interest in the concept and implementation of an Office of Technology Assessment for Congress, and

Whereas several committees of the AAAS and many of its members favor improving the effectiveness of scientific and technological information in legislative decision-making at all levels, and

Whereas the AAAS already has an effective Congressional Seminar Program informing members of Congress and their aides about key scientific and technical issues and may soon initiate a Congressional intern program,

Therefore the Committee on Science in the Promotion of Human Welfare recommends that the Board of Directors of the AAAS offer to the Congress of the United States appropriate services of the AAAS Central Office and of its membership to assist the Congress in the development of its Office of Technology Assessment (OTA).

The Committee believes that the AAAS can be of genuine service to the Congress by: expressing support and urging care in the selection of the twelve member Congressional Board; suggesting criteria to be used in selecting the Director of the Office, names of individuals which fit these criteria, and providing lists of individuals qualified for other staff positions; and, during the actual operation of the Office, providing the names of qualified scientists and technologists for advisory committees and offering such other advisory or study services as are appropriate to the AAAS and within its resources to undertake.

Dr. Branscomb reported that the Committee on Industry, Technology, and Society, at a meeting on October 20, had adopted the following statement directed to the same issue:

In view of the importance of the Office of Technology Assessment as an information arm of the Congress, the Committee strongly recommends that the chief officers of AAAS enlist the support of the presidents of NAS and NAE and together they approach appropriate legislative leaders to offer the assistance of the scientific and technical communities in service to OTA.

The Board agreed that AAAS should be of as much help as possible in the development of the new office and VOTED its approval of the fourth paragraph of the resolution from the Committee on Science in the Promotion of Human Welfare, as amended below:

The Board of Directors of the AAAS offers to the Congress of the United States appropriate services of the AAAS Central Office and of its membership to assist the Congress in the development of its Office of Technology Assessment.

Appropriate congressional committees and staff members of NAS and NAE are to be informed of this action.

8. Agenda Item 8. Scientific Manpower Commission. At its June meeting, the Board had expressed interest in the possibility of a closer relationship between AAAS and SMC, and had requested the Executive Officer to explore the matter further. He reported that SMC had requested designation

as a Participating Organization of the Association and that he proposed, if such a relationship were established, to offer SMC the following kinds of support:

- (a) rent-free space at 1776 Massachusetts Avenue;
- (b) such administrative services as are appropriate and can be added at no significant increase in cost to AAAS;
- (c) other necessary services on a cost-reimbursable basis;
- (d) operating funds in response to task-order proposals in amounts to be negotiated annually, but generally of the order of \$35,000 per year.

Under this arrangement, SMC would maintain its independence but would be accountable to AAAS for any programs it undertakes in the Association's behalf.

The Board VOTED its approval of the relationship described above. The Executive Officer pointed out that formal designation of the SMC as a AAAS Participating Organization also requires approval of Council, which he would seek by mail ballot.

9. Agenda Item 9. Mexico City Meeting. The Executive Officer reported that program planning for the Mexico City Meeting was proceeding on schedule but that he was very concerned about the problem of fund raising. He estimated direct costs of the program to be conducted in Mexico City at about \$326,000, and reminded the Board that it is committed to underwrite up to \$231,000 of that amount. Grants are expected from government agencies, international organizations, foundations, and corporations. Special attention must be given to corporate giving. Plans for a meeting of AAAS officers and corporate officers, which the Council of the Americas had offered to arrange for October 20, fell through.

It was suggested that the Association seek the aid of persons who are in a position to intercede personally with corporate officers. It was pointed out, for instance, that Detlev Bronk might be influential in arousing David Rockefeller's interest in the meeting. In approaching corporate officers, it was suggested that attention be drawn to one compelling incentive to participate--their own self interest; it would be to their advantage not to have the Mexico City Meeting become another CACTAL.

The Executive Officer emphasized his reluctance to cover expenses of the meeting with funds not authorized in the budget. Members of the Board noted that the 1972 budget could be revised to provide for a larger, authorized deficit. The Executive Officer replied that he did not wish the Association to incur a deficit, whether authorized or unauthorized; he said that he and Mr. Golden would confer and would present recommendations at the December meeting.

10. Agenda Item 10. Academic Freedom in Mexico. Enclosed with the agenda were recent letters from officers of the American Philosophical Association and the Philosophy of Science Association, the societies on whose behalf a motion had been introduced at the 1971 Council meeting calling on



the Board to examine the "political condition" of Mexican academicians before "finalizing plans for the conference in Mexico." The American Philosophical Association was not satisfied with the Board's response to the motion and has declined to participate in the meeting. The president of the Philosophy of Science Association wrote that he, personally, was not reassured, but that his Association would discuss the problem at its October meeting.

No further action was taken.

11. Agenda Item 11. Policy on Personnel Placement Ads in Science. In response to a formal protest from the Committee on Minorities in Science over the inclusion in Science of job advertisements from employers in countries which, by law, discriminate in hiring on the basis of race (specifically, South Africa), and in the light of the Association's new commitments in the area of international scientific affairs, the Executive Officer requested that the Board examine the present policy of including ads in Science from employers in South Africa. That policy, like ICSU's, is based on the judgment that it is important to promote active cooperation in scientific matters among scientists from all parts of the world, regardless of the political structures or philosophies of their governments. Moreover, a policy of isolating the scientists of South Africa from their colleagues in other countries would be unlikely to affect the practice of apartheid in South Africa; the presence of American scientists in South Africa represents potentially a far more effective instrument for social change than does a boycott of ads in an American magazine.

The following motion was made and seconded, but failed to carry: It is the policy of the AAAS Board not to accept job ads from countries which, by law, discriminate in hiring on the basis of race, creed, or sex (specifically, South Africa).

It was the view of the Board that before it could take action, it should have before it a clear-cut statement of the current practices of Science magazine with regard to the acceptance or rejection of ads of all types. Dr. Rees agreed to appoint a small committee which would review those practices, in consultation with the Executive Officer, and study the effect of alternative policies on the general relationship of American scientists to those of other countries.

12. Agenda Item 12. Science and Public Policy Studies Group. Following the June meeting, at which the Board had expressed informal approval in principle of having the Science and Public Policy Studies Group become a committee of the Association, the Executive Officer and Dr. Rieser met with Dr. Sapolsky to formulate the conditions of such affiliation. Subsequently the SPPSG Board of Trustees agreed to the following arrangements: (1) the SPPSG Board will convert into a committee of the AAAS with responsibilities to be determined by the AAAS Board; (2) the SPPSG Newsletter will be separated from SPPSG; (3) the nonprofit corporation, Science and Public Policy Studies Group, Inc., will be disestablished.

Enclosed with the agenda was a letter from Dr. Sapolsky suggesting that the new committee's charge be as follows: "To aid the AAAS Board of Directors in examining questions of public policy affecting the

promotion and utilization of scientific knowledge and to stimulate the study of such questions in the universities." Also enclosed was a memorandum from Dr. Sapolsky nominating the following persons for initial terms on the Committee: Raymond Bowers, Don Price, Brewster Denny, Victor Rabinowitch, Christopher Wright, Jurgen Schmandt, Eugene Uyeki, Derek Price, Don Kash, and Eugene Skolnikoff; he recommended the appointment of Raymond Bowers as chairman of the Committee.

The Board VOTED to establish the Committee, initially with the chairman and other members suggested by Dr. Sapolsky, effective January 1, 1973, and to approve the charge with two changes: the substitution of "advancement" for "promotion" and the deletion of the final phrase, "in the universities." It was agreed that terms would be for three years and that the Committee itself would be asked to stagger the terms of present members.

13. Agenda Item 13. Appointment of Committee Members. A supplement to the agenda listed some 275 nominees who had indicated willingness to serve on one or more committees and had provided curricula vitae, which were attached.

For each committee, the Board reviewed the qualifications of those who had volunteered to serve, and made the following selections.

#### AAAS Meetings

The Board agreed to reconstitute this committee, selected the following persons as members, and requested the Executive Officer to assign staggered terms.

Bowen C. Dees  
Norman Hackerman  
Vera Kistiakowsky (alternate: Ileen E. Stewart)  
Victor K. McElheny  
Philip C. Ritterbush  
Frank Stanton (alternate: Roger W. Heyns)  
Chandler H. Stevens  
Stephen E. Toulmin  
Ralph W. Tyler (alternate: Charles V. Kidd)

Norman Hackerman was selected as chairman, with Bowen C. Dees as an alternate. Dr. Moynihan agreed to serve as the Board's representative to the committee.

#### Public Understanding of Science

Gerald Holton (reappointment)  
David Perlman (alternate: Harriet Zuckerman)

#### Publications

Martin M. Cummings

Dr. H. William Koch, a present member of the Committee, was selected as chairman.

Science in the Promotion of Human Welfare

James D. Ebert  
Herbert Scoville, Jr. (alternate: Alonzo C. Atencio)

Dr. Ebert was selected as chairman, with present members O. M. Solandt and John C. McKinney as first and second alternates, respectively.

AAAS-Newcomb Cleveland Prize Judges

Louis J. Battan  
F. Douglas Lawrason  
Harvey Sapolsky

Leo Schubert was selected as an alternate, in case any of the above should decline.

Arid Lands

Harold E. Dregne (reappointment as member and chairman)  
Troy L. Pewe

Science Education

Johnnie T. Dennis (reappointment)  
Carl P. Swanson (reappointment)  
Kenneth A. Klivington  
Judith P. Swazey

The Board agreed to increase the Committee's membership by one. To fill the remaining two positions, the Executive Officer was requested to choose between (1) James A. Campbell and Sigfredo Maestas; (2) Marjorie Gardner and Sally Falk Moore.

Albert V. Baez, a present member of the Committee, was selected as chairman, with Carl P. Swanson as alternate.

Environmental Alterations

William M. Capron (reappointment)  
Thomas F. Malone  
Marc J. Roberts

The Board agreed to increase the Committee's membership by one. To fill the remaining two positions, the Executive Officer was requested to select two of the following nominees, the vote for whom was equally split, by drawing lots.

Donald W. Aitken  
Sidney R. Galler  
Ruth Patrick

Investment and Finance

Kermit Gordon (reappointment)

- 10 -

Youth Council representatives to other committees

David Fradin: Industry, Technology, and Society

Bernard Gifford: Environmental Alterations

Edie Goldenberg: Public Understanding of Science

Joel Primack: Science in the Promotion of Human Welfare

William Ryerson: Science Education

Walter Stewart: Publications

Virginia Walbot: Minorities in Science

The Executive Officer reminded the Board of the decision taken at its June meeting to replace the present Committee on Minorities in Science with four small panels (one on women, one on blacks, one on Chicanos and other persons with Spanish surnames, and one on Indians), each of which would advise the new Office on Opportunities in Science on activities in its specific area. As members of these panels, he presented the following nominations:

Panel on Women

Claire Nader, Associate Director, ORNL-NSF Environmental Program,  
Oak Ridge National Laboratory (proposed chairman)

Fann Harding, National Heart and Lung Institute, NIH

Mina Rees

Panel on Blacks

Warren M. Washington, National Center for Atmospheric Research  
(proposed chairman)

Carter L. Marshall, Mt. Sinai School of Medicine

Leslie Hicks, Department of Psychology, Howard University

Panel on Indians

Alfonso Ortiz, Princeton University (proposed chairman)

Rosemary Linton, Department of Psychology, San Diego State College

Michael Dorras, Dartmouth College

Panel on Spanish Surnamed

Theresa Tellez, Office of the Foreign Secretary, National  
Academy of Sciences (proposed chairman)

Alonzo C. Atencio, School of Medicine, University of New Mexico

Richard J. Griego, Department of Mathematics and Statistics,  
University of New Mexico

The Board confirmed its earlier decision to disband the Committee on Minorities, approved the panel members listed above for two-year terms, and agreed to establish a Committee on Opportunities in Science, to be composed of the chairmen of the four panels and five additional persons with broad interests, to be selected at the December meeting. Claire Nader was selected as chairman of the new Committee.

14. Agenda Item 14. Youth Council Proposal. A formal proposal from the Youth Council that the chairman and/or a member of the Youth Council be permitted to attend regular meetings of the Board, without vote, was enclosed with the agenda, together with related correspondence.

The request was denied.

15. Agenda Item 15. Conduct of Washington Meeting. The Executive Officer reported that the staff had interpreted the Board's ruling at the March meeting (that space of any sort would not be assigned at the Washington meeting to groups not affiliated with AAAS or participating officially in the meeting program) to prohibit unauthorized use of tables and other physical facilities at the meeting. He pointed to the need for the Board to explore more fully the question of what constitutes acceptable behavior on the part of persons in the meetings and courses of action the Association is prepared to take in the event of disruptive activities. The staff will develop procedures intended to minimize confrontations and to provide for prompt removal of persons who attempt to disrupt meetings, and will make recommendations to the Board at the December meeting, by which time it will have a fuller view of what is happening on the campuses and of the prevailing climate in scientific meetings. It was noted that representatives of SESPA on the West Coast have announced plans to disrupt both the Washington and Mexico City meetings, and that local SESPA representatives plan to meet late in November to plot their strategy.

16. Agenda Item 16. Concept of a National Science Center. The Executive Officer reported the results of an inquiry sent to officers of affiliated societies to determine the degree of interest in the concept of a national science center, a potential model for which is the National Center for Higher Education at 1 Dupont Circle. Of 110 replies received, 23 liked the idea, but only seven or eight expressed serious interest. It was his view, based on this survey, that had AAAS considered the possibility five years ago, interest on the part of affiliates would have been much greater.

17. Agenda Item 17. New Business.

(a) Education on Population Problems. The Board was informed that the Population Council, which had made a small grant to AAAS in support of a special issue of Science for Society: Education Review, had requested the Commission on Science Education to prepare a statement for

inclusion in that issue. After reviewing a draft of the Commission's statement, the Board requested Dr. Haskins to revise it. A copy of his revision is enclosed.

(b) California Science Curriculum. Copies of a letter from the Chairman of the ACS Board of Directors to the President of the California State Board of Education and of resolutions adopted by the National Academy of Sciences and by the AAAS Commission on Science Education, all urging that the California State Board of Education not include reference to the theory of creation in the new Science Framework for California Public Schools, were distributed. The Board agreed that it, too, wished to adopt a resolution on the matter and VOTED to approve a draft prepared by the Executive Officer for their consideration. The draft, as later modified to correct an error, follows:

Whereas the new Science Framework for California Public Schools prepared by the California State Advisory Committee on Science Education has been revised by the California State Board of Education to include the theory of creation as an alternative to evolutionary theory in discussions of the origins of life, and

Whereas the theory of creation is neither scientifically grounded nor capable of performing the roles required of scientific theories, and

Whereas the requirement that it be included in textbooks as an alternative to evolutionary theory represents a constraint upon the freedom of the science teacher in the classroom, and

Whereas its inclusion also represents dictation by a lay body of what shall be considered within the corpus of a science,

Therefore we, the members of the Board of Directors of the American Association for the Advancement of Science, present at the quarterly meeting of October 1972, strongly urge that the California State Board of Education not include reference to the theory of creation in the new Science Framework for California Public Schools and that it adopt the original version prepared by the California State Advisory Committee on Science Education.

(c) International Science. The Executive Officer reminded the Board of the \$25,000 grant from the Rockefeller Foundation to support a six-month study of the feasibility of establishing a AAAS Office of International Scientific Affairs, and summarized discussions that he, Dr. Seaborg, and Dr. Rieser had had with officers of the British, French, and other associations. He advanced Dr. Rieser's suggestion of the possibility of arranging for a small group to get together following the BA meeting next summer, possibly at Bellagio, to explore common interests of the various associations.

Dr. Rieser called attention to a symposium on science in the U.N. to be held at the Annual Meeting on December 29, and suggested that it would be of interest to talk with the participants to find out what is already being done, what needs to be done, and what role AAAS might play.

- 13 -

Dr. Seaborg reported that a delegation of Chinese scientists will be coming to the U.S. in late November under the auspices of the Committee on Scholarly Communication with the People's Republic of China, which is jointly sponsored by the NAS, the Social Science Research Council, and the American Council of Learned Societies, in cooperation with the Federation of American Scientists. It was suggested that AAAS invite one or two members of the delegation to extend their stay and attend the Washington meeting in December.

(d) Finances. Mr. Golden reported that the net worth of the Association is roughly \$4 million, of which a little over \$2 million is invested in common stock. Since the Committee on Investment and Finance dismissed its counsel, the Association's investment in mutual fund shares has increased by about 11% in market value, as compared to a 4% increase in Dow Jones averages and a 9% increase in Standard and Poor averages. The 1972 budget shows anticipated income on securities of about \$60,000; the actual figure will be close to \$150,000.

(e) Gaithersburg Conference. Dr. Bolt reported that the Joint Conference on Technology and Governance in Achieving Environmental Quality held in Gaithersburg from September 19 to 22, to which AAAS had sent several representatives and had contributed \$200, had been a great success and that a written report of the discussions is being prepared.

---

The meeting adjourned at 12:45 P.M.

William Bevan

November 10, 1972

We had lunch in the neighboring lunch room, then walked over to the auxiliary AAAS headquarters at 1776 Massachusetts Avenue and inspected them.

Bevan and Branscomb may confer further with Jose de Cubas of the Council of the Americas in connection with fund raising for the Mexico meeting. Bevan may enlist the help of Detlev Bronk.

We postponed action on the criteria for ads in Science and may come back to the issue at a later meeting on a broader basis. We approved the affiliation with the AAAS as a committee of the Committee on Science and Public Policy.

David Perlman, Science Editor of the San Francisco Chronicle, was appointed to the Committee on the Public Understanding of Science. We then chose members of the Committee on Meetings and a number of other committees.

I attended the reception and dinner of the Board in the Tayloe Room of the Cosmos Club. Present as guests were: John Baldeschwieler, Glenn Schweitzer, Richard Bolin, Enrique Martin del Campo, Jorge Vargas, Edmundo de Alba, and Raoul Ondarza.

After dinner, I took a taxi back to Harrison Street and spent an hour talking with Pete, Jane and Andrew. They then left to attend a midnight movie. Cincinnati won the sixth game of the World Series, 8-1, bringing it down to a tie.

Sunday, October 22, 1972 - Washington - Lafayette

I took a taxi to AAAS headquarters to attend the meeting of the AAAS Board of Directors. For the Committee on Environmental Alterations we approved William Capron, Thomas Malone, Marc Roberts, and Sidney Galler or Ruth Patrick. We chose additional Committees. We discussed conduct of the December Washington meeting. The Board is tending to be more hard-boiled about disruptions.

We passed a resolution urging the State of California to reject the teaching of the special theory of creation, to Newton L. Steward, President of the California State Board of Education, with a enclosed letter signed by Mina Rees and me. A copy will be sent to Wilson Riles, and Bevan will prepare and issue a press release after conferring with Melvin Calvin.

We discussed progress on establishing a AAAS Office of International Activities; this may be an agenda item at the December Board meeting. I described the impending visit of Chinese scientists and my role on the arranging committee.

After adjournment of the meeting, David Blackwell and I had a quick bite to eat in the dining room, then rode with Jimmy to Dulles Airport. Here we watched the first five innings of the World Series game, with Oakland leading 1-0, then boarded United Airlines #585 which left at 2:50 p.m. We learned from the captain at 4:00 p.m. that Oakland won, 3-2! Helen and Dianne (who had been to the San Francisco 49ers-New Orleans Saints football game, final score 20-20) met us at



the San Francisco Airport, where we arrived at 6:00 p.m. We drove Dave to his home on Wheeler Street in Berkeley.

Monday, October 23, 1972 - Berkeley

Donald Kerst called me at 8:45 a.m. from the University of Wisconsin in his capacity as Chairman of the Plasma Physics Division of the American Physical Society. They are holding their annual meeting in Monterey during the week of November 13. He invited me to be their banquet speaker, but I declined because I will be in Washington at the international AIF/ANS meetings.

At 9:00 a.m., I went down to hear George Pimentel's Chem 1A lecture. I came back up to my office, answered some mail, and then went to Latimer Hall to hold my office hour. At 11:20 a.m., Susan Sahara of Kennedy High School in Richmond (who saw me in a number of films when she took high school chemistry) came in just to talk with me. She had been told by her friend Carol Wong, who is in Room C of my class, that she could talk to me. I gave her copies of Nuclear Milestones and Peaceful Uses of Nuclear Energy.

I had lunch with the chemistry faculty in the Howard Room of the Faculty Club. I told them about the action of the AAAS Board yesterday urging the California State Board of Education to reject the new Science Framework for California Schools, which calls for the teaching of a special theory of creation, and about our efforts to publicize this. I also informed the group of the forthcoming visit of the Chinese scientists. I also told them about Dr. Keldysh's visit tomorrow. (I learned that Henry Rapoport has refused to attend the luncheon at University House tomorrow because of the Levitch matter).

I taught my Room C Chem 1A section and returned to my LBL office. Earl Hyde came in to report that the Personnel Office had approved a reclassification for Sheila to AE-3; their letter indicated some assurance that this position could grow to an AE-4, which I had originally requested.

David Shirley came in and I indicated that I would not be able to attend Thursday's tenure faculty meeting because of my speech commitment at Riverside. The appointment of John Rasmussen is on the agenda; I suggested that Joe Cerny be prepared to talk about John's work if needed and gave him John's updated biobibliography.

I called Anne Keatley at the National Academy of Sciences in Washington at 3:20 p.m. to discuss the arrangements for the first conversation of the organizing committee for the visit of Chinese scientists to the United States. The conference call is set up for Wednesday at 10:00 a.m. She told me that the visit is being hosted by the NAS Committee on Scholarly Communication and that they are working closely with Jeremy Stone of F.A.S. I indicated that Jeremy had discussed this with me on Saturday night. The organizing committee's first task will be to plan a tentative itinerary based on a three-week stay. We must decide who the local hosts will be; I indicated that I would hope to play this role at Berkeley. She described some of the arrangements made for the Chinese medical doctors who are presently visiting the United States. They asked the U.S. Government to provide

security protection, which requires an intricately detailed itinerary for the Department of State's use. Philip Lee is their host for their visit in San Francisco, beginning October 28. The American Medical Association is holding a farewell banquet for them there on the 31st.

At 4:00 p.m., I went to the regular Nuclear Chemistry Seminar, at which Sven Gosta Nilsson spoke on "Further Exploratory Hikes Among the Nuclear Potential Energy Surfaces."

At 6:30 p.m., Helen and I attended the College of Chemistry dinner in the Howard Room of the Faculty Club, hosted by Dean Templeton, in honor of Lyle H. Jensen, this year's Gilbert Newton Lewis Memorial Lecturer. Those present were: Lyle Jensen, the Neil Bartletts, the Melvin Calvins, the William F. Giaugues, the John Hearsts, the Joel Hildebrands, the Hal Johnstons, the Dan Koshlands, the Kenneth Pitzers, the Kenneth Sauers, the David Shirleys, the David Templetons, the Nacho Tinocos, and the Allan Zalkins.

I sat next to Bunny Koshland which gave us a good chance to renew our acquaintance. I also reminisced with Lyle about his period of service with me at the Met Lab, which extended from the summer of 1943 to the fall of 1944. We all then went over to the Physical Sciences Lecture Hall where Lyle, after being introduced by Dean Templeton, delivered the Nineteenth Annual Gilbert Newton Lewis Memorial Lecture, entitled "X-Ray Structural Studies of Proteins."

Tuesday, October 24, 1972 - Berkeley

At 8:15 a.m., I met at the east entrance of California Hall on the Berkeley campus with Mark Christensen, George Leitmann, and Officer Davis of the UC Police Department. We rode over to the Mark Hopkins Hotel in San Francisco to meet our Soviet guests. Three additional University cars--all four with student drivers--went along. Here, in front of the hotel, we met Dr. Mstislav V. Keldysh, President of the USSR Academy of Sciences; A. M. Prokhorov; G. I. Marchuk; Yu. A. Ovchinnikov; I. M. Makarov; S. G. Korneyev, Administrator; and Yuri Khomenko, interpreter from the Soviet Embassy in Washington. (I had already met, besides Keldysh, Marchuk on my visit to Novosibirsk, and Khomenko in Washington.)

I rode back to Berkeley with Keldysh and Leitmann, followed by the others. We went directly to the Chancellor's Conference Room in California Hall, where this group, together with the individual hosts for the day and others, assembled around the conference table. Those present were: Chancellor Albert Bowker, Vice Chancellor Mark Christensen, Charles Townes, Sidney Fernbach, Melvin Calvin, George Leitmann, Sanford Elberg, John O'Brien, Glen Grant, Errol Mauchlan, Roderic Park, and George Maslach; the Soviet guests, plus Alan Campbell (National Academy of Sciences), Walter Boyle (Security Officer, U.S. Department of State), and John Gillis (Security Officer, National Academy of Sciences).

Breakfast rolls and coffee and tea were served. The meeting opened with some welcoming remarks by Chancellor Bowker, in which he said this was the most important group to visit the campus during his 15 months' tenure as Chancellor. Bowker turned to me and I reinforced

Tuesday, October 24, 1972 (con't)

his view that this was the most important group during that period, indicated that I had already described the University of California system to Keldysh and others during our visit at the Mark Hopkins Hotel and during the ride over, and expressed my pleasure that they were visiting with us. Keldysh responded with some gracious remarks about his and his colleagues' delight in visiting Berkeley. The ensuing discussion was concerned mostly with the description of the University of California and also the overall higher education system in California, such as the state "universities" (colleges) and community colleges.

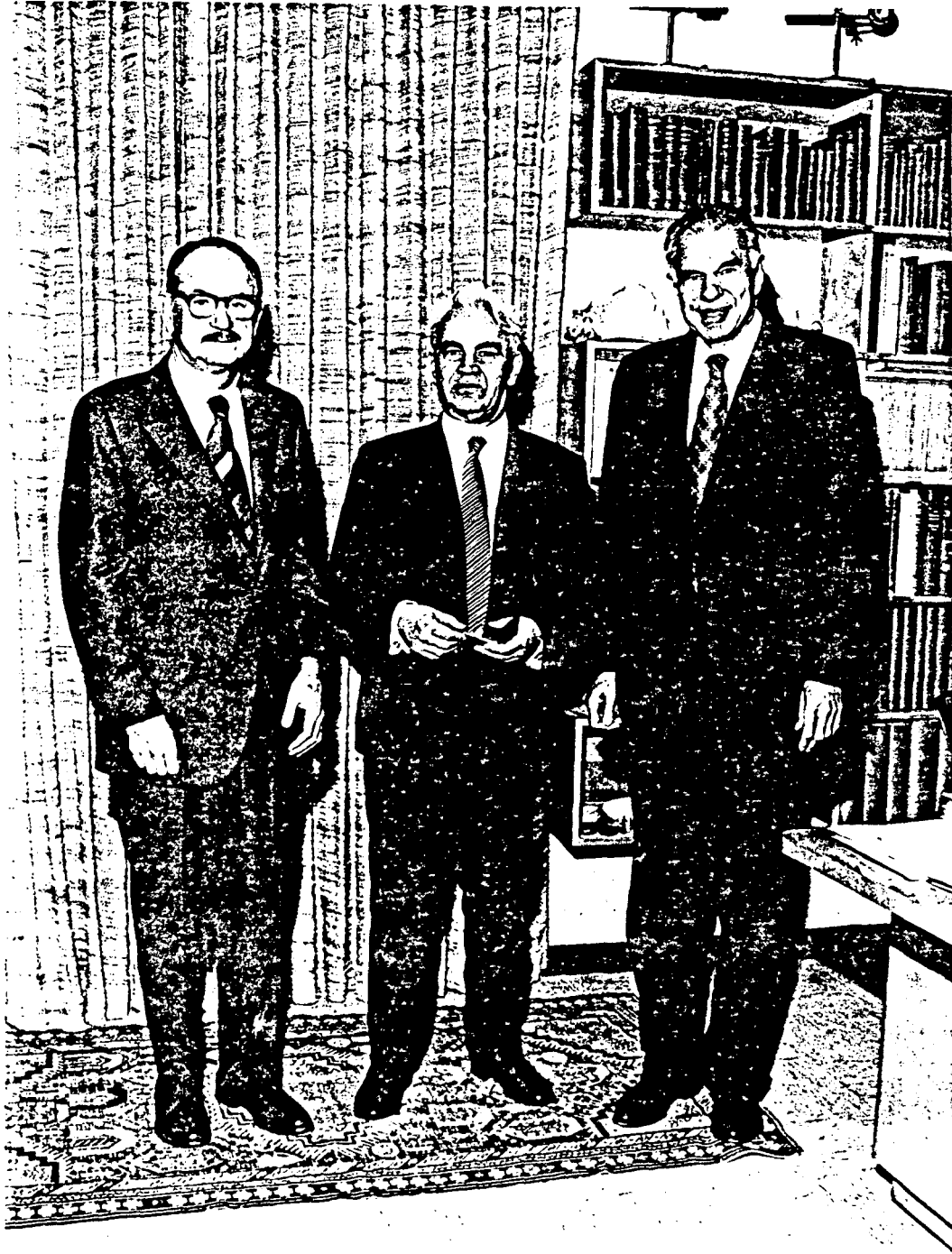
At 10:00 a.m., we went off in five directions, with each host leading his charge through the morning's program. Keldysh and Korneyev went with me, and we first went up to Edwin McMillan's office where he gave them a short briefing about the Lab. We then went to the Computer Center in the basement of Building 50 where Paul Rhodes showed us around.

From here we went to the Bevatron, where Owen Chamberlain first showed them his proton polarization scattering experiments; in the course of this, he spoke to Keldysh about the Levitch case and the general Jewish exit problem in the Soviet Union--he did it quite tastefully, and Keldysh responded in a most restrained way, emphasizing the fact that an education in the Soviet Union is free to a greater extent than in any other country and hence there is the feeling that if the people who thus benefit do not stay to serve their country, they should pay the cost.

We then went to the Medical Cave Area, where Cornelius Tobias described his experiments and then back up to the upper entry level where Ed Lofgren gave a general description of the Bevatron and its program. From here we went to the HILAC Building, where Al Ghiorso together with Bob Main gave them a complete tour and explanation. Ghiorso included an invitation through Keldysh to Flerov to cooperate with us at Berkeley, and I mentioned that Flerov and Oganessian are planning to visit us next spring. Al gave Keldysh two large pictures of the SuperHILAC (which will be mailed to him).

We stopped off at my office in Building 70A. Here I showed Keldysh the Mendeleev book which had been sent to me and a picture of the Lab which I will mail to him. We then drove down to the campus to Evans Hall, where we met Kenneth Hebert, Director of the Computer Center, in his office. He brought us down to the computer center and gave us a complete tour.

After this, we proceeded to University House by a circuitous route, finally entering the back door via the gate on Hearst Avenue in order to avoid the pickets who manned the other entrances in connection with the problem of Jewish emigration from the Soviet Union to Israel. We avoided the pickets so far as Keldysh and Korneyev were concerned, but some of the others who came in through the front saw the placards as they entered.



LBL Director's Office, October 24, 1972: Dr. Edwin M. McMillan, Dr. M. V. Keldysh, GTS.



Bevatron, October 24, 1972: S. G. Korneyev, M. V. Keldysh, Cornelius Tobias, Edward Lofgren, GTS.



SuperHILAC, October 24, 1972: Albert Ghiorso, M. V. Keldysh, GTS, S. G. Korneyev.



SuperHILAC, October 24, 1972: Albert Ghiorso, M. V. Keldysh, GTS, S. G. Korneyev.



In his office at the Lawrence Berkeley Laboratory, Dr. Seaborg shows Dr. Keldysh the book by Mendeleev bearing Mendeleev's inscription: October 24, 1972.



After a period of mixing in the reception room of University House overlooking the garden, we all went downstairs to the grand ballroom for lunch. Present at the lunch were the principal hosts in addition to faculty from the Department of Electrical Engineering and Computer Sciences. I sat at a table with Chancellor Bowker, Keldysh, and Luis Alvarez. Following lunch, Chancellor Bowker gave a toast of welcome and presented them with gifts (the Fiat Lux book), and Keldysh responded with words of appreciation.

From University House we went to Cory Hall, where we met in the Hughes Room on the top floor. The rather large group included Thomas E. Everhart, Chairman of the Department of Electrical Engineering and Computer Sciences; Professor Lotfi Zadeh of the Department; Keldysh; Korneyev; Makarov, with his host George Leitmann; the translator Khomanko; Alan Campbell and John Gillis of NAS; Antoni Oppenheim; and others. Zadeh described his computer programming used in connection with his work on artificial intelligence.

From Cory Hall, this entire group (except Everhart) proceeded on up to the Lawrence Hall of Science, where we were greeted by Mac Laetsch, Director, and the Associate Directors Robert Karplus and Leon Henkin. We then made a tour of the Hall under the guidance of the Directors and Staff Assistants Mauri Gould, Bob Content, and Harry Morrison.

Following this, we went to the Space Sciences Laboratory, where the Director, Kinsey Anderson, gave us a short tour. From here we drove back to our starting point at California Hall. Here I gave to Keldysh a small memento from me (a gold tie-clip with the University of California seal). We bade adieu to the group, and all the visitors except Prokhorov (who was still with Townes) were driven back to the Mark Hopkins Hotel in San Francisco.

I returned to my office to catch up on the day's mail and left for home at 5:35 p.m.

Wednesday, October 25, 1972 - Berkeley

George Cardinet called me at 8:50 a.m. in his capacity as Chairman of the Regional Trails Committee. He wants to talk with me about the Huckleberry Trail matter to find out about my alternative proposal for a horse trail. I told him that I am leaving town and suggested that he contact Leo Brewer.

I attended Pimentel's Chem 1A lecture from 9:10-10:00 a.m. When I returned to my office, the conference call of the Organizing Committee for the Visit of Chinese Scientists was under way. Those on the line were: Anne Keatley, Sheldon Atlas, Harrison Brown, Richard Garwin, Marvin Goldberger, Emil Smith, and Alexander Eckstein (University of Michigan). Anne announced that their arrival date is changed to November 20, in Washington, so that they can deal with the problem of the holiday weekend. We spent the next hour discussing the itinerary, identifying institutions in each city, naming people in the institutions, and identifying local hosts.

There will be 23-24 in the traveling party, including ten people in the delegation plus one or two from the PRC Mission to the U.N., three National Academy staff, and about six Department of State security people. The delegation arrived in London on September 7 and has been traveling steadily. We were told that they want to travel together, though they can be broken up in individual cities. We agreed that they should stay in central city hotels when visiting each area, with busses to transport them to outlying areas. She said that the medical doctors were over-programmed. They want more substance and more rest. Therefore, we should arrange only one major reception in each city and 1-2 days' rest every week. Ann will arrange the overall transportation; the local host is responsible for ground transportation within his area. NAS will pay all costs (via grants from NSF and the Kettering Foundation).

We discussed a general itinerary for them and agreed on the following general outline: November 20-22, Washington, D.C. area; November 23-26, Stony Brook area; November 26-December 2, New York area; December 2-5, Boston area; December 6-9, Midwest area; December 9 or 10-15, San Francisco Bay Area. Because I will be on the East Coast through the 12th, we agreed that they would visit Stanford, etc. during the early part of their time here and visit Berkeley on the 13th and 14th. I extended the invitation of the AAAS for the delegation to attend the AAAS annual meeting in Washington; Anne suggested that the invitation be extended to the delegation upon their arrival, in case some or all of them want to stay beyond their scheduled December 16 departure date.

At 1:00 p.m., I taught my Chemistry 1A section in Room F. Earl Hyde and Ken Street came in at 4:00 p.m. to discuss the Nuclear Chemistry budget with me.

I took a hike with Suki to the water tank. Jim and Alice Robinson were with us for dinner.

Thursday, October 26, 1972 - Berkeley - Riverside

I called John Erlewine at the AEC in Washington at 8:40 a.m. to tell him about the imminent visit of the Chinese scientists and to clear any problems with the AEC about their visiting such facilities as Brookhaven, the National Accelerator Laboratory, and even possibly AEC headquarters. He indicated that he would check this out, but didn't anticipate any problem. I also asked him to check out my briefing session with Hollingsworth, possibly for late Monday afternoon, November 13, which he said he will follow up.

I called Howard Greyber at AAAS at 8:50 a.m. to indicate agreement in principle with his letter to me of October 19 and that we can set up the luncheon he suggests and get down to the details. We agreed that we would call a first luncheon meeting of the advisory group at the UCB Faculty Club on November 28. Those to be invited will include David Blackwell, Albert Bowker, Melvin Calvin, and Gunther Stent of Berkeley; Robert Hofstadter, Stanford; Joshua Lederberg, Stanford Medical Center; Philip Lee, UCSF; Hans Mark, Ames Research Center; James Meyer, Davis; David Saxon, UCLA; Kenneth Thimann, Santa Cruz; and Charles Townes. I suggested he invite ten

Thursday, October 26, 1972 (con't)

people with the hope that five or six would be at any meeting. I also suggested that he drop in on me at AAAS offices on November 14, when I will be there for the Committee on Council Affairs meeting.

I called Alan Nixon's office at 9:15 a.m. to report the action of the AAAS Board of Directors on the teaching of creation in the California schools. Nixon himself was out of town, but I said I would send him a copy of the resolution.

AEC Chairman James Schlesinger returned my call at 10:30 a.m. I told him about the forthcoming Chinese visit. He said that he couldn't imagine that there would be any difficulty in their visiting AEC laboratories, but said he would check with John Flaherty. He then changed the subject to the matter of the budget and suggested that those of us in California have a natural advantage for contacting Caspar Weinberger on this subject in a casual manner, and he thinks Weinberger is sensitive to the problem. I asked where the BEVALAC stands; he didn't know, but guessed that there will be no outlays until the FY74 budget is cleared. Again, he suggested that we involve some other people in the California establishment to contact Weinberger about this. I asked him about help for the SuperHILAC; he said that he has this very much in mind and that, unless a budget disaster occurs, we shouldn't worry too much.

I called President Hitch at 10:35 a.m. I recalled our conversation about a year ago regarding the BEVALAC, at which time he suggested I write to William French Smith. I told him of my conversation with Schlesinger and his suggestion that to save the BEVALAC we may have to try the same path again to reach Weinberger. I noted that Congress and the President both passed the bill for \$2.2 million and that it is now caught up in the general hold-up by which they are trying to slow down spending. I indicated that it is now more critical to the Lab than it was a year ago; indeed, our future depends on this. He told me that the Regents will visit the Lab on November 8 and indicated that he will forewarn some of them before that time; he is not sure whether Smith is coming to this meeting.

I then called Edwin McMillan to report on my conversations with Chairman Schlesinger and President Hitch. I indicated that I had urged the latter to talk with McMillan and noted that this matter cannot go beyond the three of us. Ed noted that John Lawrence might be a good avenue, but we agreed to see what President Hitch comes up with first.

Helen drove me to the San Francisco Airport where I boarded United Airlines Flight No. 700, which left at 12:30 p.m. and arrived in Los Angeles at 1:20 p.m. I was met by Riverside students Stewart Kaps (a basketball player and political science major) and Tina Caldwell (an education major). Stewart drove us to the Ramada Inn near the Riverside campus, where I checked into room 109, and then to the campus itself. He took me to the office of Dean Donald T. Sawyer of the College of Physical Sciences. After talking a while, we were joined by R. Stephen White, Director of Geophysics and Planetary Physics, and we walked to the Physics Building auditorium.

At 3:45 p.m., I was introduced by White for my talk to their regular Thursday afternoon Physics Department Colloquium. A number of people from the Chemistry and Mathematics Departments were also present. I gave my talk, "Status Report on the Transuranium Elements," illustrated with 48 slides and followed by questions, to a fairly good-sized audience including a number of students. After my talk, I returned a phone call from President Hitch, called Sheila, then went to the Faculty Club where I attended a reception in my honor. Among others, I talked to Benjamin C. Shen and Nat Li Huang Liu, who obtained their Ph.D.'s through LBL and still make frequent visits to work at the Bevatron.

After the reception, I rode with Sawyer to Jacques' Restaurant in Riverside where I had dinner with Sawyer, White, Glen E. Everett (Department of Physics, a solid state physicist interested in working with Am-II), Douglas E. McLaughlin (Department of Physics, solid state physicist from Berkeley who heard me talk as Chancellor at the 1960 Christmas program), David R. Kearns (Department of Chemistry, who got his Ph.D. with Calvin in 1956-60), Si Schaluger (Dean of the College of Geological Sciences), and Ken Gardner (Department of Applied Science). The group was quite concerned about the diminishing student enrollment at Riverside and its portent for the future. After dinner, Kearns drove me back to the Ramada Inn.

At the meeting of the Chemistry Department tenure faculty at Berkeley today, the question of offering John Rasmussen a position as Professor was discussed and there was no objection.

Friday, October 27, 1972 - Riverside - Irvine - Lafayette

I had breakfast in the restaurant of the Ramada Inn, after which I participated in a press conference in the lobby. Bob Carven, of the Riverside Press Enterprise, asked me questions covering a broad range, including my teaching, personal life, the energy crisis, nuclear power, and the quality of life. Frank Hopkins, Broadcast Media Coordinator, Office of Public Affairs, UC Riverside, asked me questions, with my answers recorded on tape for broadcast over a dozen or so radio stations, on the energy crisis, nuclear power, energy in the year 2000, nuclear waste disposal, safety of nuclear power plants, etc.

I then rode with Stewart Kaps to the University of California at Irvine and proceeded to the office of Dr. Frederick Reines, Dean of Physical Sciences. After a short conversation with him, a number of members of the Department of Chemistry came by and we proceeded to the Commons where we had lunch in the Gatepost Room. Present were Everly B. Fleischer (Chairman of the Department of Chemistry and whom, he said, I chased out of Room 405 Jones Chemical Laboratory at the University of Chicago when it was made into a National Historic Landmark in 1967); Vincent P. Guinn (working in activation analysis and whom I knew when he was working at General Atomic in San Diego); George E. Miller (Lecturer in Chemistry and Reactor Supervisor, from Oxford University); Max Wolfsberg (working on isotopic effects, from Washington University, and brother of Kurt Wolfsberg of Los Alamos, who obtained his Ph.D. with Art Wahl); Robert T. McIver, Jr. (working on gas phase ion chemistry and who obtained his Ph.D. with John

Baldeschwieler at Stanford); and F. Sherwood Rowland (working in hot atom chemistry and chairman-elect of the ACS Division of Nuclear Chemistry and Technology).

After lunch, we walked back to the Physical Sciences Building where I visited a number of labs. First, I visited, with Guinn, Miller and Rowland, the research reactor on the ground (basement) floor; this is a Triga Reactor of 250 KW, capable of being stretched to 2 MW and pulsed at 1,000 MW. Here I met graduate students Dave Miller and Patrick Grant. I also saw the 14 Mev neutron source (200 Kv D-T). We then visited McIver's lab where he described his work with his Ion Cyclotron Resonance (ICR) Spectrometer; he is working on molecules such as isopropyl alcohol and the ion molecules formed from it. I then visited Rowland's Radio Gas Chromatography lab and met a number of graduate students; among the reactions being investigated are those of fluorine atoms in the form of  $F^{18}$  produced by the  $n,2n$  reaction and thermalized before reacting.

I then had brief discussions with Rowland and Guinn in their offices, after which I went back to the office of Dean Reines. He described to me his work at the Savannah River Plant on the scattering of neutrons by electrons, a very basic test of theory which seems to confirm theory. We recalled his euphoria of two years ago when he thought he had found some spectacular deviations from theory.

I then walked with Reines to the Science Lecture Hall where he introduced me, at 4:00 p.m., to a large audience containing many students. I gave my talk, "Status Report on the Transuranium Elements." This was the regular Physics Colloquium, but attended in this case by chemists and others. My talk was followed by only one question because a 5:00 class was standing by to occupy the hall.

I rode to the Moonraker Restaurant with Reines, where I had dinner with him, Richard Wallis (working in chemical physics, Head of the Department of Physics), Jonas Schultz (Department of Physics, high energy physicist), Everly Fleischer (Chairman, Department of Chemistry), William Parker (Department of Physics, working on the Josephson effect), Douglas Mills (theoretical physicist, solid state), Ron Poteet (graduate student in physics), Joseph Weber (visiting from the University of Maryland, worked on famous experiment detecting gravity waves), and Virginia Trimble Weber (member, Department of Astronomy, daughter of my UCLA classmate Sterling Trimble, recently married to Joe Weber but still teaching at Irvine). I sat next to Virginia and learned that she is extremely well versed in astrophysics and has taught nuclear physics at Irvine; her mother died six months ago.

After dinner, Ron Poteet drove me to Los Angeles Airport where I boarded United Flight No. 530, which left at 9:10 p.m. and arrived in San Francisco at 10:00 p.m. Helen met me and drove me home.

Saturday, October 28, 1972 - Lafayette - Hayward

I went on the Hayward Shoreline-Coyote Hills Field Trip with the Citizens Task Force of the EBRPD. We gathered at the Ora Loma Sanitary District Water Treatment Plant on Grant Avenue in San Lorenzo at 9:00 a.m. Here we met Dr. Howard Cogswell, our guide for the day.

Also with us was Mart Volheim, of the Sanitary District, and later Lewis Crutcher and Bill Horne. Among those who I had a chance to talk to were Susan Watson, Molly Reeves (and her 11-month-old son Wesley), Edwin Lane, Janice Delfino, Emily Sudduth, and Harold Chall. About 20 members of the Task Force were there. First, we visited the area near Roberts Landing, then near Hayward Landing, then at the Oliver Salt Company property near Johnson Landing, and finally the Coyote Hills Regional Park where we ate the picnic lunches we had brought with us. After touring the Park area, we went to the nearby Indian Shell Mound Area where naturalist Norm Kidder gave an hour-long lecture at one of the Mounds which has been excavated and prepared as an exhibit for the public. The exposed wall starts at modern times at the top and goes down some ten feet to a level corresponding to 1000 or 1500 B.C.

At 4:00 p.m., I left the group and drove home. I mowed the grass in our back yard and the infield area of our vacant lots--this wild grass had grown as the result of the rains of a few weeks ago. I read my mail and office papers in the evening. Dianne's friend Cherie had dinner with us.

Sunday, October 29, 1972 - Lafayette

I read mail and papers during the morning. In the morning, Dianne, Pancho and I went to our land in Orinda and put up some more barbed wire to prevent trespassing of horses from Tres Mesas Stables. We also visited Mr. and Mrs. Simmons, whose property adjoins our land and who have kept us informed of the transgressions on our land.

Monday, October 30, 1972 - Berkeley

Bob Silva arrived with Phil Horwitz early this morning, preparatory to our sessions on the Chemical Identification of the Superheavy Elements. At 9:00 a.m., I heard Pimentel's lecture.

From 10:15-11:15 a.m., together with Jack Hollander and Andrew Sessler, I met with Chancellor Albert Bowker and Vice Chancellor Mark Christensen at California Hall to describe and discuss the cooperative program between LBL and the campus on Energy and Environment.

I then held my office hour, receiving visits from Susan Sahara and David Vieira. Bob Thorne called me while I was in my Latimer Hall office. He told me about his talks in Washington, which have led him to believe that we will get additional financial support for the SuperHILAC and suggests that Hollingsworth will discuss this matter with me during our conference the week after next.

I ate lunch with the Chemistry Department and taught my class at 1:00 p.m. I mailed a letter to William French Smith (with copies to President Hitch, Congressman Craig Hosmer, and John Canaday), concerning our need to have the funds released from OMB for construction of the BEVALAC (copy attached). I also wrote the Bohemian Club to support Charles Townes for membership in the Club (copy attached). I received a letter from Francis Perrin about his reported discovery of a natural uranium pile in Gabon.

## LAWRENCE BERKELEY LABORATORY

UNIVERSITY OF CALIFORNIA

BERKELEY, CALIFORNIA 94720 □ TEL. (415) 843-2740

October 30, 1972

Mr. William French Smith  
634 South Spring Street  
Los Angeles, California 90014

Dear Mr. Smith:

You may recall that in November 1971, I wrote to you (at the suggestion of President Charles Hitch and Regent John Canaday) to secure your help in alleviating a serious funding problem that faced the Lawrence Berkeley Laboratory of the University of California. This concerned the Bevalac, an acronym for the combination accelerator using the extraordinary capability of the Bevatron and the just-completed Superhilac for accelerating heavy ions to high energies (the Superhilac produces the heavy ions and the Bevatron accelerates them to high energies).

Your help was effective, and an allocation of \$2.0 million was incorporated into the FY 1973 budget for the construction of the Bevalac--a most fortunate circumstance for the very future of the Laboratory. The Congressional bills were signed by the President, but the actual release of construction money is presently being held back by the Office of Management and Budget (OMB) along with other funds.

Our new problem arises because of this delay. The Superhilac construction has been successfully carried out and the machine is in the initial stages of operation (although it is sadly crippled by an inadequate operations budget). The Bevatron (designed for the acceleration of high energy protons) has demonstrated by itself that it is technically capable of accelerating heavy ions to high energies, but it is of course limited to beams of very low intensities. Injection of intense heavy ion beams from the Superhilac will make possible the vital cancer treatment studies that I referred to in my first letter as well as the extremely interesting research in nuclear physics and chemistry.

Unless the Bevalac funds are released soon, the planned program will be seriously disrupted and even imperiled. This technical program includes the construction of the transfer

William French Smith

- 2 -

October 30, 1972

line that connects the two accelerators and necessary modifications to the Superhilac. Without these funds, the highly trained personnel who will carry out this work will have to be released since there are no other new construction projects in the Laboratory. Without these key engineers and physicists, the continued successful operation of the Superhilac itself will be jeopardized, and this at a time when the exciting experiments looking toward the production of superheavy elements are about to begin.

It is vital to the Laboratory that the Bevalac funds be released as quickly as possible. Since Caspar Weinberger was instrumental in arranging for the inclusion of this item in the FY 1973 budget and in obtaining Congressional approval, it seems reasonable to believe that he might authorize construction to begin when he realizes that any further delay affects us so adversely.

I believe that it would be a real tragedy for the University and the world to lose this unique opportunity to open up an entirely new research area which promises to be so important for mankind. The Bevalac will be an extraordinary machine, unique in the entire world, and only possible at modest cost and on an early time scale because of the fortunate location of both the Superhilac and Bevatron, in close proximity to each other, at Berkeley.

Cordially yours,

Glenn T. Seaborg

GTS/sms

cc: Regent John E. Canaday  
President Charles J. Hitch  
Director Edwin M. McMillan

bcc: Earl Hyde  
Albert Ghiorso



October 30, 1972

Membership Committee  
The Bohemian Club  
624 Taylor Street  
San Francisco, California 94102

Gentlemen:

I am writing in support of Professor Charles H. Townes for Faculty Membership in the Bohemian Club.

Charles Townes is one of the world's great scientists, having won the Nobel Prize for his fundamental work in the field of quantum electronics which led to the construction of oscillators and amplifiers based on the laser-maser principle. He is more popularly referred to as the co-discoverer of the laser, which is assuming such an important place in the life of mankind.

Townes has assumed the position of one of the leading statesmen of science in the United States. He displays a forceful but pleasant personality and is one of the most socially accomplished people I know. He mixes well and is a stimulating conversationalist on a wide range of subjects.

My acquaintance with Townes has been on both a social and business level, and Mrs. Seaborg and I are acquainted with Mrs. Townes as well.

It is my opinion that the applicant will support and further the objectives of the Club and will participate in the activities when called upon. I do not feel that I can predict whether he will use the Club frequently, but I am quite certain that he will be a regular participant in the Summer Encampment.

All in all, I believe that Charles Townes is the kind of colleague that Bohemians will like and appreciate, and I very much urge his election to membership.

Sincerely yours,

Glenn T. Seaborg

GTS/ams

At 4:00 p.m., I attended the regular Nuclear Chemistry seminar where Carol Alonso spoke on "Recent Approaches to the Coriolis Problem in Odd Mass Nuclei."

I took a hike with Suki to the water tank and watched the football game between the Dallas Cowboys and Detroit Lions; Dallas won, 28-24.

Tuesday, October 31, 1972 - Berkeley

I met in the Conference Room of the HILAC Building with Ghiorso, the Alonsos, Nurmia, and Nitschke for the regular Tuesday morning planning session from 8:45-9:30 a.m. The SuperHILAC is beginning to run on argon ions from the small ion source Eve, and experiments have started with the Diamond-Stephens-Thompson and Gutbrod users group, and so forth.

The SHEIKS (Superheavy Element Interlaboratory Khemists) met in the Conference Room of Building 70A from 9:30 a.m. to noon to discuss the chemical separation procedures for use in connection with the identification of the superheavy elements. Those present were Bob Silva (Oak Ridge), Jol Liljenzin, Jens Kratz, Phil Horwitz (Argonne), Kurt Wolfsberg (Los Alamos), Bill Daniels (Los Alamos), Jim Harris, Mike Nitschke, Al Ghiorso, Matti Nurmia, and Ken Hulet.

At noon, many of us went to the cafeteria for lunch. After, I joined Dr. Sevastian N. Rapeanu (Director, Head of the Staff for Training and Specializing, Division of the State Committee for Nuclear Energy, Bucharest, Romania) and Dr. Ioan I. Brandus (Head of the Research Section for the same Committee), together with Norman Glendenning, at a table outside the cafeteria for dessert. I brought them back to my office for a short visit. I had met Professor Rapeanu when I was in Bucharest in 1969 and Professor Brandus when I was there in 1971.

The SHEIKS resumed meeting from 1:30-3:00 p.m. We discussed further our collaborative program. We decided that it would be necessary to soon make a bombardment of uranium with heavy ions--any will do--in order to practice all of the steps of target preparation, handling of hot targets, effect of fission product radiations in the superheavy element fractions, and so forth.

I wrote to G. K. Skryabin (Acting Chief Learned Secretary, Presidium of the USSR Academy of Sciences, Moscow) declining his invitation to visit the Soviet Union to take part in the Jubilee Session of the General Assembly of the USSR Academy of Sciences devoted to the 50th Anniversary of the founding of the USSR at the end of November.

At 3:30 p.m., Sam Markowitz brought one of his new graduate students, Donnie Murphy, to my office.

Suki and I took a hike to the water tank. Pancho worked on straightening the bricks on our front porch steps and front walk. Numerous kids came by to "trick or treat," and Dianne took Yehudit Sherman (our 3-year-old neighbor) on a tour of the neighborhood.

Wednesday, November 1, 1972 - Berkeley

I called Howard Greyber at AAAS in Washington to discuss our setting up an Advisory Committee for the 1974 Annual Meeting. He indicated that he wants to ask a local industrialist to be the general chairman of the organizing committee, and he wants to contact either Bill Hewlett or David Packard. I suggested that he check on their respective interest in AAAS. He plans to write to them, following that up with some telephone calls. I indicated that I would serve as chairman of the committee, which will meet every six weeks or two months to pull together ideas which can be turned over to the local planning committee. We discussed local industrialists whom he might contact. He will try to have an agenda for the December 5 meeting ready for me to see on November 14. He will invite about 16 people, with average attendance expected to be 10-12.

I attended Pimentel's Chemistry 1A lecture in the Physical Sciences Lecture Hall from 9:10-10:00 a.m. I then walked back up the hill to my office. At 10:30 a.m., I met with Stan Thompson to discuss his problems with reducing his budget. It may be necessary to cut out his work on californium-252.

I had lunch in my office, then walked down to the campus to teach my Chemistry 1A section in Room F, Latimer Hall. I mailed to Rodney Hader at the American Chemical Society the suggested citation on Albert Ghiorso in connection with his receipt of the 1973 Award for Nuclear Applications in Chemistry (copy attached).

Suki and I took a hike to the water tank. Pancho continued re-laying bricks on our front walk.

Thursday, November 2, 1972 - Berkeley - Santa Cruz

Today is Dianne's birthday; she is now a teenager.

I met with the Chemistry Group of the Superheavy Elements Research Program from 9:30-10:30 in the Conference Room of the HILAC Building. Present were Ghiorso, Silva, Liljenzin, Kratz, Nurmia, Jose Alonso, and Nitschke. We made arrangements for the bombardment of a uranium target with a small beam of argon ions originating in the Eve ion source in order to test the target handling and chemical procedure throughout. We also discussed means of preparing targets for later higher intensity bombardments.

At 1:30 p.m., I left my office to drive to Santa Cruz and arrived on the UC campus at 3:15 p.m. I went to the office of Vice Chancellor George Hammond and he introduced me to Earl Evleth, Chairman of the Board of Study in Chemistry. Evleth took me to a room in which Roger Anderson's graduate students were working on atomic beam experiments. They had an experiment involving the reaction of nitrogen molecules with laser-excited polonium ions under way, inaugurating their apparatus that they have spent the last two years building, but they ran into difficulties with the apparatus while I was watching. They were disappointed that they couldn't show me the experiment in progress. The students included Terrence Goddard, who served as spokesman, Martin Mach, Carlo Parravano, and Jim Warner.

November 1, 1972

Mr. Rodney N. Hader  
Assistant to the President  
American Chemical Society  
1155 Sixteenth Street, N.W.  
Washington, D.C. 20036

Dear Rod:

This is in reply to your letter of October 25, 1972. I would suggest the following for the citation on Albert Ghiorso:

"for his role in the discovery of the eleven transuranium elements with atomic numbers 95 to 105, inclusive, and of numerous isotopes of these and other elements, for his many contributions to instrumental techniques for measuring nuclear properties, and for his conception of the Bevalac as an instrument for accelerating very heavy ions to very high energies."

However, I am curious as to where the award presentation will actually be made. The notice to the members of the Division of Nuclear Chemistry and Technology (copy enclosed) seems to say that the presentation will take place at the Division meeting in Newport Beach in January.

With best regards,

Cordially,

Glenn T. Seaborg

GTS/sms

enc.

After talking with the students for a while, we went to the office of Professor Stanley Williamson, who served as an Assistant Professor at Berkeley in the early 1960's; his specialty is inorganic chemistry, but he doesn't have any graduate students yet. Besides Williamson, the group here consisted of Evleth, a graduate student named David Bear, Terry Goddard, Carlo Parravano, Martin Mach, and Joseph F. Bunnett, Professor of Inorganic Chemistry. We discussed generally the problems of unemployment among scientists and the prospects for the future and the general support picture for sciences in the United States now and in the future.

I then went to Roger Anderson's office for a visit. He did his graduate work with Herschbach at Harvard. His wife is an assistant to the editor of Accounts of Chemical Research, the publication of which is centered at Stanford. From here I went to the office of Edward Dratz, who obtained his Ph.D. working with Calvin at Berkeley from 1961 to 1966 and then spent one postdoctorate year with him, leaving in 1967 to go to Santa Cruz. He is working on the chemical processes of vision and has four graduate students. We talked in general about his program and his earlier work with Calvin, and so forth.

Evleth drove me down to the central area of Santa Cruz where we had dinner at the Hind Quarter Restaurant. Others present were Vice Chancellor Hammond, Williamson, Bunnett, Mr. and Mrs. Peter Scott (head of the Board of Study in Physics at Santa Cruz, who obtained his degree with Carson Jeffries at Berkeley in 1962).

After the dinner, I rode back to the campus with Evleth to the Science Lecture Hall. After being introduced by Vice Chancellor Hammond, I gave my talk, "The Transuranium Elements," illustrated with 48 slides and followed by a question-and-answer period. I left the campus at 9:30 p.m. and arrived home at 11:15 p.m.

Dave had dinner at our home with Helen and Dianne, after which Helen drove the three of them to Davis so that Dave could hear a talk by Paul Ehrlich. Helen and Dianne visited Steve and Eric while Dave was at the talk. They returned home at 11:45 p.m. after delivering Dave to his home in Berkeley.

Friday, November 3, 1972 - Berkeley

I called Admiral Lewis Strauss in Washington at 8:45 a.m. to tell him about the AIF/ANS meeting there the week of November 12 and to invite him to attend any of the functions. He said that he was very touched at my thoughtfulness and would let me know of any function in which he would be interested. I wrote to Harold Fidler to report on the visit of M. V. Keldysh (copy attached).

At 10:00 a.m., I met with Kenneth B. Ericson, head of the San Francisco Office of the Domestic Contact Service (DCS) of CIA to discuss various matters concerned with my travels. He told me that my participation in their program to gain information is of course entirely on a voluntary basis and my name will not be used as a source other than to indicate that a prominent nuclear chemist visited the Soviet Union at such-and-such a time. He said that the headquarters of DCS is in the Key Building in Rosslyn and not at the main headquar-

November 3, 1972

Dr. Harold A. Fidler  
Director's Office  
Building 50A, Room 4133E

Dear Harold:

This is to report on the visit to the Lawrence Berkeley Laboratory of Dr. Mstislav V. Keldysh, President of the USSR Academy of Sciences, and Dr. S. G. Korneyev, Administrator, on October 24, 1972.

Dr. Keldysh and his colleagues came to the United States under the US-USSR National Academies of Sciences exchange program. They visited the University of California at Berkeley as guests of Chancellor Albert Bowker. Each of the Soviet guests was assigned a principal host for individual programs throughout the day. These participants were:

President M. V. Keldysh . . . .	Glenn Seaborg, host
Academician A. M. Prokhorov . .	Charles Townes, host
Academician G. I. Marchuk . . .	Sydney Fernbach, host
Academician Yu. A. Ovchinnikov .	Malvin Calvin, host
Dr. I. M. Makarov . . . . .	George Leitmann, host

After a general reception of the delegation at the Chancellor's Office, I brought Dr. Keldysh and Dr. Korneyev to Director McMillan's office, where he gave them a short briefing about the Laboratory. We then went to the Computer Center in the basement of Building 50 where Paul Rhodes showed them around.

From here we went to the Bevatron. Cornelius Tobias described his experiments at the Medical Cave Area, and Ed Lofgren gave them a general description of the Bevatron and its program.

We then proceeded to the HILAC Building, where Albert Ghiorso and Robert Main gave them a tour and description of the Superhilac. We stopped off briefly at my office in Building 70A, and then returned to the campus.

Chancellor Bowker hosted a luncheon for the entire delegation at noon. The balance of the individual program for Dr. Keldysh consisted of a visit to the campus Computer Center, a consultation with Professors Thomas E. Everhart and Lotfi Zadeh of the Electrical Engineering and Computer Sciences Department, and visits to the Lawrence Hall of Science and the Space Sciences Laboratory.

Sincerely,

Glenn T. Seaborg

bcc: J. Gonzales

Friday, November 3, 1972 (con't)

ters. He asked me a number of questions about Flerov and his work on the superheavy elements, which I answered along the lines of what I have described in a number of talks to our groups here on the hill since the visit. He asked me about the visit of Lenard Pal to LBL on October 4, and I replied that it was primarily a social visit. I was unable to answer any of his questions concerning the status of solid state physics in Hungary. He also mentioned the forthcoming visit to LBL of Myasoyedov, and I said that I remembered meeting him during my visits to the Institute of Physical Chemistry in September; Ericson is particularly interested in Soviet practices with respect to the disposal of radioactive wastes from nuclear power plants.

I had lunch in my office with Bob Silva. We discussed the general status of the SHEIKS program and future plans. I then drove the station wagon down to the Life Sciences parking lot and left the keys in David's lab. Perlman rode down with me and we walked up to Latimer Hall in a driving rain and attended the regular Friday meeting at 1:10 p.m. of the Chemistry 1A teaching staff. Following this, I walked up the hill to my office.

The Program Committee of the Nuclear Chemistry Division met in my office from 2:30-4:15 p.m. Those present were Ghiorso, Glendenning, Diamond, Hollander, Hyde, Perlman, Poskanzer, Street, Templeton, and Thompson. Maynard Michel and Frank Stephens joined us. I opened the meeting by announcing the imminent visits of the Chinese scientific delegation on December 9-15 (at the Lab on the 13th), Christoph Schmelzer and Rudolph Bock from GSI next week, the Regents Committee on Special Research Projects from November 8, Van Dyken on November 9, and John Teem on November 10. I noted about the latter that this is one of the most important encounters that we are going to have for our future security, and I asked the committee to think ahead about how they could make the most of their five minutes in which to describe their individual projects.

Earl announced the opening in nuclear chemistry at the University of Rochester, per Jacob Bigeleisen's letter. He also requested that there be no program activity during the Christmas shutdown. We then went into a serious and detailed discussion about the budget. Earl said that Pappas has received information that the AEC or OMB is not going to let any money be spent on the BEVALAC before next January, which would be disastrous for us. Earl briefly outlined the Super-HILAC budget situation. We then proceeded through a detailed analysis of the budget picture. Ken Street projected that we will have to cut out 30 man years as of November 1 or shut down completely at certain times in order to survive. We reviewed the storeroom proposal for reducing support costs there and then reviewed the roster of persons who might be put on half-time or terminated.

I rode home in the Volvo with Helen. Suki and I took a hike to the water tank. Due to the rain, the roof was leaking in the front hall. I hooked up a funnel with a hose connecting to the down spout from the upper level roof and ran the water down to the driveway area via the hose; this stopped the leak in the house.

Saturday, November 4, 1972 - Berkeley

Helen and I went to a luncheon at the Bowkers' in University House. Present were Mr. and Mrs. William Corlett (he is an architect in Berkeley and on the Alumni Council), Mr. and Mrs. William Millikin (personal friend of Bowker and a member of the Bohemian Club), Mr. and Mrs. Robert Meyer from Santa Rosa, Mr. and Mrs. Henry Trione (Senior Vice President, Wells Fargo Bank in Santa Rosa; he and his wife are alumni), and Garff Wilson.

After lunch, we put together a pool on today's game between Cal and the University of Oregon, advancing one dollar each for a total of \$13, the winner to be determined on the basis of the person who comes closest in guessing the total score. I guessed 61 and Helen 56. We then walked up to Memorial Stadium and watched the game in the Chancellor's box. The Bears won, 31-12, so Mr. Corlett won the pool with his guess of the total score of 43.

During halftime, I walked down to the Athletic Department's box, where I talked to Dave Maggard and his guests, who included Kathryn (Mrs. Bing) Crosby and her two sons, Harry and Nathaniel, and daughter Mary Frances. Apparently Mrs. Crosby is a supporter of the University of Oregon. We had an opportunity to talk about science in general, and I found that Mary Frances has an interest in it. I said that I would send her a copy of Man-Made Transuranium Elements. Also there were Ben Lom, his daughter and Arleigh Williams.

I asked the Chancellor if he would serve on the Advisory Committee for the 1974 AAAS Annual Meeting, which he said he would do, though he isn't sure he can attend the first meeting on December 5. I also told him about the forthcoming visit of Chinese scientists, and he said he would be glad to receive them in his conference room on the morning of the 13th.

After the game, Helen and I drove down to Life Sciences to pick up our station wagon. Dave was there, and I drove him home, which gave me an opportunity to see his room at 835 Indian Rock Road where he is staying with the Dairiki family. I then drove him back to the campus--he was planning to have dinner somewhere on Telegraph Avenue--and then drove on home. Suki and I took a hike to the water tank.

Sunday, November 5, 1972 - Lafayette

I worked in our yard and field, cutting the wild grass, pulling weeds, etc. I read papers, Chem 1A material, and took a hike to the water tank with Suki.

Monday, November 6, 1972 - Berkeley

I wrote to congratulate Manson Benedict on receiving the Enrico Fermi Award for 1972 and Eric Bellquist on being named a Knight Commander of the Royal Order of the Northern Star.

I attended Pimentel's Chem 1A lecture in PSL from 9:10-10:00 a.m., walked back up the hill to go over my mail and make some phone calls, then walked back to Latimer Hall to hold my office hour. Mark



Monday, November 6, 1972 (con't)

Mandel, a friend of the grandson of Professor W. R. Crowell of UCLA came in to introduce himself; he said he had heard about me from the Crowells for most of his life. He was in the upper 1% of Chem 1C last spring quarter, was in my lab section, got straight A's as a freshman, and asked me to write him a letter of recommendation for admission to "Human Sciences" studies at Oxford University, which I said I would do.

I had lunch with the Chemistry Department faculty in the Howard Room of the Faculty Club, where we discussed the problem of bomb threats in rooms where chemistry examinations are held. I then taught my Chem 1A lab section in Room C.

After I returned to the hill, Hyde and I met with Warren Garrison to warn him of the possible curtailment of his work on radiation chemistry in view of budget stringencies.

Ken Raymond called me. I told him we would be willing to take care of his graduate student, Gordon Halstead. He won't be on the payroll before the Spring Quarter. He would be working jointly with Raymond and through me with Edelstein, but would be signed up under Raymond. I warned Raymond that we can only provide a minimum of support and agreed on an upper limit of \$1,000 per year for computer time.

William French Smith wrote me in response to my letter to him of October 30 reporting on his conversation with Caspar Weinberger (copy attached).

Marvin Goldberger called me from Princeton at 3:30 p.m. He indicated that Anne Keatley has suggested that the Federation of American Scientists sponsor the farewell banquet in San Francisco for the Chinese scientific delegation on December 14. He said that FAS will be happy to do this and that he will come out to the West Coast for it. I suggested that we let Art Rosenfeld arrange the banquet.

I called Charles Hitch at 4:40 p.m. to tell him about the impending visit of the Chinese scientists and ask if we could arrange for them to be greeted at the President's Office. He indicated that he will be gone on the 13th but that John Perkins would be available and suggested that I call him directly. I then called John Perkins, who said he would be happy to set up a greeting at 9:30 a.m. in University Hall on December 13.

I called Errol Mauchlan at 5:05 p.m. in his capacity as Assistant Chancellor for Budget. I told him about the Chemistry Department's dilemma with Iz Perlman's resignation and our absolute need to replace him with a high-quality nuclear chemist. I indicated that a recommendation of John Rasmussen would probably be coming forth from the Dean's Office and hoped that it would receive particular attention in the Budget Committee of the Chancellor's Office. Errol indicated that George Maslach will be the key person in this matter.

Suki and I hiked to the water tank.

GIBSON, DUNN & CRUTCHER  
LAWYERS  
515 SOUTH FLOWER STREET  
LOS ANGELES, CALIFORNIA 90071

AREA CODE 213  
TELEPHONE 620-9300  
TELEX: 67-4930  
CABLE ADDRESS: GIBTRASK

November 3, 1972

FREDERIC H. STURDY  
IAN COIT VINEY  
BERT A. LEWIS  
SHERMAN S. WELPTON, JR.  
WILLIAM FRENCH SMITH  
JULIAN C. VON KALINOWSKI  
F. DANIEL FROST  
RICHARD H. WOLFFORD  
SHARR W. THOMRE  
SAMUEL C. BRUITT, JR.  
FRANCIS W. WHEAT  
ARTHUR W. SCHMUTZ  
NORMAN B. BARKER  
MAX EDDY UTT  
GEORGE H. WHITNEY  
FRANK L. MALLORY  
WILLIAM F. SPALDING  
JOHN T. RIGOTT  
JAMES R. MUTTER  
JEROME C. BYRNE  
JOHN L. ENDICOTT  
J. ROBERT POST, JR.  
ROBERT D. BLANCH  
WILLARD Z. CARR, JR.  
RAYMOND L. CURRAN  
GEORGE W. BERMAN  
JOHN J. HANSON  
DEAN C. DUNLAVEY  
G. EDWARD FITZGERALD  
ROY D. MILLER

GUY R. CLAIRE  
F. LEE COLTHER, JR.  
RUSSELL L. JOHNSON  
ROBERT S. WARREN  
HERBERT KRAUS  
RONALD E. GOYNER  
JEROME F. FREGOZNIK  
IRWIN F. WOODLAND  
JOHN H. SHARER  
JAMES H. MURPHY  
CHARLES S. BATTLES, JR.  
STEPHEN E. TALLENT  
ROBERT T. GELBER  
CHESTER A. SKINNER  
PAUL G. BOWER  
ROBERT E. COOPER  
THOMAS H. CHANCELLOR  
JOHN F. OLSON  
ROBERT K. MONTGOMERY  
KENNETH E. RISTAU, JR.  
RONALD S. BEARD  
BRUCE L. GITELSON  
MARSHA A. MCELLEN  
DEAN STERN  
WESLEY G. HOWELL, JR.  
THEODORE B. OLSON  
DON J. BELCHER  
JACK W. WALGREN  
KENNETH W. POOVEY  
JAMES E. BEARDSLEY

JAS. A. GIBSON, 1852-1922  
W. E. DUNN, 1851-1925  
ALBERT CRUTCHER, 1860-1931  
RICHARD E. DAVIS  
OF COUNSEL

BEVERLY HILLS  
9801 WILSHIRE BOULEVARD  
BEVERLY HILLS, CALIF. 90210  
AREA CODE 213  
TELEPHONE 273-6990

NEWPORT CENTER  
NEWPORT FINANCIAL PLAZA  
850 NEWPORT CENTER DRIVE  
NEWPORT BEACH, CALIF. 92660  
AREA CODE 714  
TELEPHONE 644-2071

EUROPE  
4 RUE SAINT FLORENTIN  
PARIS I  
TELEPHONE 742-1951  
CABLE ADDRESS: GIBTRASK PARIS  
TELEX 21005

OUR FILE NUMBER

528 11/6/72

Dr. Glenn T. Seaborg  
Lawrence Berkeley Laboratory  
University of California  
Berkeley, California 94720

Dear Glenn:

Following receipt of your letter I had a very satisfactory conversation with Caspar Weinberger, Director of the Office of Budget & Management. While he could not commit as to the disposition of our request, I am sure that we will receive the most favorable consideration within the limits with which he must work.

We will hope that all goes well.

Sincerely,

*Bill*  
William French Smith

WFS:MLT

CC: Regent John E. Canaday  
President Charles J. Hitch  
Director Edwin M. McMillan

*Copy in confidence: A. Thiorso*

## GIBSON, DUNN &amp; CRUTCHER

LAWYERS

515 SOUTH FLOWER STREET

LOS ANGELES, CALIFORNIA 90071

AREA CODE 213

TELEPHONE 620-9300

TELEX: 67-4930

CABLE ADDRESS: GIBTHASK

November 3, 1972

FRANCIS W. STURDY  
 VANCE L. HEN  
 DONALD L. WILSON, JR.  
 WALTER S. SMITH  
 JAMES L. RAUNOUSHI  
 RICHARD FOSTER  
 RICHARD W. FORD  
 THOMAS H. THRESE  
 DANIEL C. HINTON, JR.  
 CHARLES M. WHEAT  
 EDWARD W. SCHMIDT  
 NORMAN BLANKEN  
 WALTER D. FOSTER  
 GEORGE H. HANNEY  
 FRANK C. WALLACE  
 WILLIAM F. SPALDING  
 JOHN T. HIGGINS  
 JAMES R. HUTTER  
 JEROME C. BRYNE  
 JOHN L. ENJIGOTT  
 J. ROBERT HOSCH, JR.  
 RICHARD C. BUNCH  
 WILLARD Z. CARP, JR.  
 ARMOND L. COCHRAN  
 GEORGE W. BISHART  
 JOHN J. HANSON  
 DEAN C. GUNLAVEY  
 G. EDWARD FITZGERALD  
 ROY C. MILLER

GUY F. LEAINE  
 FAYE COOPER, JR.  
 EUGENE L. JOHNSON  
 ROBERT S. WASHEN  
 NEWELL T. RAUS  
 EDWARD L. GONNER  
 JEROME E. PHLOPHER  
 HARVEY WOODLAND  
 JOHN H. SHERRIN  
 JAMES M. MURPHY  
 CHARLES S. DATTLS, JR.  
 STEPHEN E. IALFANI  
 ROBERT J. GELBER  
 CHESTER A. BRINER  
 PAUL G. LOUER  
 ROBERT E. COOPER  
 THOMAS H. CHANCELLOR  
 JOHN F. OLSON  
 ROBERT F. MONTGOMERY  
 KENNETH E. HIRSTAU, JR.  
 RONALD S. BEARD  
 BRUCE L. GIBELSON  
 MARSHA E. McLEAN  
 DEAN STERN  
 WESLEY G. HOWELL, JR.  
 THEODORE S. OLSON  
 DON J. BELCHER  
 JACK M. MALONE  
 KENNETH H. POOVEY  
 JAMES E. BEARDSLEY

307 F. GIBSON, 1956-1962  
 & DUNN, 1963-1965  
 415 F. CRUTCHER, 1967-1971  
 RICHARD S. DAVIS  
 OF FLOWERS

BEVERLY HILLS  
 9801 ANTHEM BOULEVARD  
 BEVERLY HILLS, CALIF. 90710  
 AREA CODE 213  
 TELEPHONE 273-6600

NEWPORT CENTER  
 NEWPORT FINANCIAL PLAZA  
 550 NEWPORT CENTER DRIVE  
 NEWPORT BEACH, CALIF. 92660  
 AREA CODE 714  
 TELEPHONE 644-2071

EUROPE  
 4 RUE SAINT FLORENTIN  
 PARIS I  
 TELEPHONE 742-1051  
 CABLE ADDRESS: GIBTHASK PARIS  
 TELEX 21805

OUR FILE NUMBER

Mr. Caspar Weinberger, Director  
 Office of Budget & Management  
 Executive Office of the President  
 Bureau of the Budget  
 Washington, D. C. 20503

Dear Cap:

Many thanks for taking the time to discuss the Bevalac project of the Lawrence Berkeley Laboratory of the University of California. As you know, \$2.0 million has been included in the FY 1973 budget for this purpose and there is an urgent need for its release at this time.

As discussed, I am enclosing a copy of the letter to me from Glenn T. Seaborg which outlines the need for this allocation.

We are all most appreciative of the many demands which are made upon you but feel that the uniqueness and importance of this item calls for special consideration. Thank you indeed for your assistance.

Warmest regards,

Sincerely,

  
 William French Smith

WFS:MLT  
 Enclosure

Tuesday, November 7, 1972 - Berkeley

At 9:30 a.m., Christoph Schmelzer, Chairman of the Board of Directors, GSI, and Rudolph Bock, Scientific Member, Board of Directors, together with Hans Gutbrod, Albert Ghiorso, Robert Main, and Earl Hyde, met with me in my office. Schmelzer and Bock had arrived last night from Germany; they are here to pursue the negotiations for cooperation between GSI and the Berkeley heavy ion group.

After a general discussion in my office, we walked up to the HILAC Building where Ghiorso and Main conducted a rather detailed tour of the HILAC. At about noon, Schmelzer, Bock, Gutbrod, Main, and I had lunch in the cafeteria in the lower level. We were joined by a number of German scientists working at LBL.

Following lunch, Schmelzer, Bock, Gutbrod, and I visited Kratz and Liljenzin in their lab, where they brought us up-to-date on their chemical experiments preparatory to their work on the superheavy elements. After this, Schmelzer and Bock rode with Gutbrod up to the HILAC Building while I returned to my office for a few minutes.

I then returned to the HILAC Building for the inter-laboratory monthly conference call on the superheavy elements, which lasted 45 minutes, beginning at 1:30 p.m. Schmelzer and Bock were present, and the participants included Chin-Fu Tsang, Ray Nix (Los Alamos), Carol Alonso, Bill Myers, W. Swiatecki, Hans Gutbrod, Sven Gosta Nilsson (with two of his students listening), Heiner Meldner (San Diego), Mike Howard (LASL), Franz Plasil (ORNL), John Huizenga (Rochester), Felix Wong (ORNL), Arnold Mueller, Chr. F. Ahrenkeil, and Ghiorso.

Following this, we went downstairs where Ghiorso gave Schmelzer and Bock, accompanied by Gutbrod, a tour of SASSY with a complete description. We also took them into the room off the machine shop where the thin formvar windows for SASSY are being produced, and the technician there gave them a demonstration of the production of such a window.

We then went up to the conference room where the group was joined by Main, Hyde and Don Reardon (AEC San Office). We discussed the details of the agreement for cooperation, including the financial arrangements. We then came to the tentative conclusion that the German financial contribution would be set up in a fund under Bob Main and that the purpose of the fund would be to pay for the research and development contributions to the UNILAC that the work of five German scientists would provide as a result of their work at the SuperHILAC. Ghiorso and Main will try to draw this up in the form of a written description which will be presented to Schmelzer and Bock for their consideration before they leave.

At 6:30 p.m., I had dinner with Schmelzer, Bock, Gutbrod, Ghiorso, and Main at Norman's Restaurant. The discussion was entirely of a social nature.

As I drove home, I listened on the car radio and then watched on TV the election returns. I watched Senator McGovern deliver his statement conceding defeat, in which he read the telegram that he was

sending to President Nixon, and, following this, watched President Nixon's victory statement addressed to a crowd of supporters at the Shoreham Hotel. Nixon's popular vote was about 61% of the total, and he received the electoral votes of every state except Massachusetts and the District of Columbia.

Wednesday, November 8, 1972 - Berkeley

I went down to hear Pimentel's Chem 1A lecture. I left a little early and went back up the hill to Room 4205, Building 50B to attend the meeting of key Lab personnel with the Regents Committee on Special Research Projects. Present from the Lab were Ed McMillan, Bill Wenzel, Ed Lofgren, James Bassham, Hardin Jones, Tom Budinger, Elmer Kelly, Robert West, George Pappas, Harold Fidler, Earl Hyde, Robert Hinckley, and Mel Klein. The Regents and other University officials attending were Glenn Campbell (Committee Chairman), John H. Lawrence, William A. Wilson, President Charles J. Hitch, Joseph A. Moore, George H. Link (Regent Designate), Edward Teller (Advisor to Committee), Vice President John A. Perkins, and his staff assistant Richard D. Wolfe.

We followed the agenda (copy attached). In my presentation, I gave a general briefing on the work taking place in the Nuclear Chemistry Division (handout attached), emphasizing the work on the heavy and the superheavy elements and the conversion of the HILAC into the SuperHILAC. I described the performance capabilities of the HILAC and SuperHILAC, emphasized that it is a national facility with outside users, and described the impending relationship to the Bevatron in the form of the BEVALAC. I also described the booster that we plan for some time in the future--costing perhaps \$5 million--that would accelerate ions out of the SuperHILAC to 30 MeV per nucleon and hence into the BEVALAC to give a SuperBEVALAC with heavier ions. I described, as did others, the problem with getting the \$2 million in funds for the Bevalac released from OMB and there were indications from the Regents that they will help on this.

After the morning session, the group went to lunch in the lower level of the cafeteria, where we had a buffet lunch. Since I sat next to Regent Campbell and Vice President Perkins and near President Hitch, we had a chance to pursue further the urgency of funding for the BEVALAC. After lunch, the group, including the Regents and some others, made a tour of a number of facilities and continued the discussion. The tour included the SuperHILAC which was under the leadership of Ghiorso. I went down and taught my Chem 1A lab section in Room F, where we gave them the second quiz of the quarter (copy attached).

Following my teaching session, I walked back up the hill and, at 3:15 p.m., joined the Regents in their windup session. I came into the meeting just as Edwin McMillan was making the surprising announcement that he is resigning as the Director of the Lawrence Berkeley Laboratory, effective about a year from now. He feels that this will give the Lab the opportunity to find a successor. There were a number of statements praising McMillan for his long career of scientific accomplishments and leadership of the Lab. There was further discussion of the need to spring loose the funds for the BEVALAC with the implication that Regents Campbell and Wilson and others would help.

Agenda for Visit to LBL  
The Regents Committee on Special Research Projects  
Wednesday, November 8, 1972  
Room 4205, Bldg. 50B

10:00	Briefing on LBL program and plans for the future	E. M. McMillan
10:30	Physics program Bevatron and Bevalac	W. A. Wenzel E. J. Lofgren
10:50	SuperHILAC and Nuclear Chemistry programs	G. T. Seaborg <del>A. Ghiorso</del>
11:10	Chemical Biodynamics program	J. A. Bassham
11:20	Medical programs and Bevalac	H. B. Jones T. F. Budinger
11:40	Bevatron tour	E. J. Lofgren
12:00	Lunch at Cafeteria	
12:45	Hilac tour	A. Ghiorso
1:15	184" Cyclotron and medical cave	K. M. Crowe C. M. Tobias
1:45	Bldg. 62 Conference Room Inorganic Materials Research Development program	L. Brewer V. Zackay
2:15	Bldg. 50B Conference Room Energy and Environmental programs	J. Hollander
2:30	Summary and concluding remarks	E. M. McMillan
3:30	Program concluded	

Regents and others expected to attend:

Glenn Campbell, Chairman  
John H. Lawrence  
William A. Wilson

Charles J. Hitch  
Joseph A. Moore, Jr.  
George H. Link (Regent Designate)  
Edward Teller (Advisor to Committee)

John A. Perkins (Vice Pres., Administration)  
Richard D. Wolfe (Staff)

## CAPSULE SUMMARY - NUCLEAR CHEMISTRY DIVISION

Lawrence Berkeley Laboratory

Glenn T. Seaborg, Head  
Earl K. Hyde, Deputy Head

Budget (in thousands of dollars)	FY 72	FY 73 Congressional Appropriation	FY 73 after recent hold- back directive
Heavy ion accelerator operations	1,525	1,460	1,460
88-inch Cyclotron operations	960	930	930
Research	<u>6,450</u>	<u>6,060</u>	<u>5,950</u>
Total	8,935	8,450	8,340
Reduction from FY 72		-5.5%	-6.7%

## Manpower Mix

Scientific man years + divisional administration & office	130
Engineering support man years.	130
Faculty major association with program	8
partial association with program	7
Graduate students with AEC fellowship support doing their research at LBL	39
Summer undergraduate program	10

## History

Founded in 1946 by G. T. Seaborg and I. Perlman. Active in synthesis and identification of new elements, radiochemical isolation techniques, radiochemical study of radioactive products from targets bombarded in Crocker Lab 60-inch cyclotron, 184-inch cyclotron, and bevatron. Study of  $\alpha$ ,  $\beta$ , and  $\gamma$  radioactivity. Nuclear structure, nuclear reactions, chemical properties of transuranium elements and rare earth elements. Design, construction, and operation of two major accelerators: the heavy ion accelerator (HILAC) and the 88-inch sector focusing cyclotron.

## PRESENT RESEARCH FIELDS

Heavy and Superheavy Elements

Reconstruction of Hilac into Superhilac

Nuclear Structure & Nuclear Properties

Nuclear Spectroscopy & Radioactivity

Nuclear Reactions & Scattering

Nuclear Theory

Nuclear Fission

Chemical & Atomic Physics

Photoelectron Spectroscopy

Atomic & Molecular Spectroscopy

Hyperfine Interactions

Physical Inorganic & Analytical Chemistry

X-ray Crystallography

Ion Exchange Separations of Inorganic Ions

Extraction of Inorganic Ions with Organic Solvents

Radiation Chemistry

Molecular Structure

Application of Nuclear Techniques to Interdisciplinary Research  
such as geology and archaeology

Instrumentation Development



Open Book

Chemistry IA Section II Wednesday Nov. 8, 1972 40pts. 35 min.

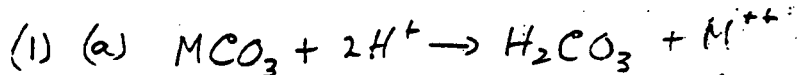
(1) (8 pts.) 8.43 grams of a pure compound,  $MCO_3$ , was dissolved in acid solution and the evolved  $CO_2$  collected. After drying, the volume of the  $CO_2$  gas was 2740 ml measured at  $27^\circ C$  and 0.90 atm.

- (a) Write the balanced equation for the net chemical reaction.  
 (b) What is the molecular weight of  $MCO_3$ ?  
 (c) What is the atomic weight of M and what element is M?

(2) (6 pts.) B, Be, and C are reacted with excess flourine. Write the electron dot formulas of the resulting compounds

(3) (14 pts.)  $Ag_2SO_4$  solid can be dissolved in 0.1M  $AgNO_3$  solution at  $20^\circ C$  up to a maximum of  $1.5 \times 10^{-3}$  moles  $Ag_2SO_4$  per liter of solution. Write balanced equation for  $Ag_2SO_4$  solid dissolving in the aqueous solution. In such a saturated solution, calculate the concentrations of  $Ag^+$  and  $SO_4^{2-}$  and from these values, calculate the solubility product of  $Ag_2SO_4$  at  $20^\circ C$ .

$Ag_2SO_4$  solid can be dissolved in 0.25M  $Na_2SO_4$  solution at  $20^\circ$  up to a maximum of  $4 \times 10^{-3}$  moles  $Ag_2SO_4$  per liter of solution. In such a saturated solution, calculate the concentrations of  $Ag^+$  and  $SO_4^{2-}$  and from these values, calculate the solubility product of  $Ag_2SO_4$  at  $20^\circ C$  and compare with value calculated above.



(b)  $PV = nRT \quad n = \frac{PV}{RT} = \frac{(0.9)(2740)}{(82.05)(300)} = 0.1$

or  $n = \frac{2740 \times 273}{22,400 \times 300} = 0.1$

$MCO_3 = \frac{8.43}{0.1} = 84.3$

wt. of sample = 8.43g

(2)

$(0.1)^2 (1.5 \times 10^{-3}) = 1.5 \times 10^{-5}$

$Ag^+ = 0.153$   
 $SO_4^{2-} = 1.5 \times 10^{-3}$

$Ag^+ = 2 \times 10^{-3}$

$SO_4^{2-} = 0.25$

$(8 \times 10^{-3}) / (0.25)$

$8 \times 10^{-3} \times \frac{1}{4} = 1.6 \times 10^{-3}$

(4) (10 Pts) The following record of tests on Assignment 17 unknowns is copied from the notebook of a student who had carefully recorded each test he had done.

Each test on fresh portion of unknown.	<u>Unknown A</u>	<u>Unknown B</u>
(1) Litmus paper in unknown	red color	Blue Color
(2) Unknown on wire in flame	Yellow flame	Yellow flame
(3) Added $\text{Na}_2\text{CO}_3$ soln.	Yellow Ppt.	Black ppt.
(4) Added 6M NaOH and held red litmus over soln.	$\text{NH}_4^+$ Blue litmus	Red litmus
(5) Added $\text{AgNO}_3$ soln.	Clear	Brown ppt. <i>Dilute acid</i>
(6) Carefully poured 1 ml 18M $\text{H}_2\text{SO}_4$ down side of slanted test tube containing 1/2 ml unknown.	Clear	Bubbles, clear soln.
(7) Added $\text{Ba}(\text{NO}_3)_2$ soln. <i>forgot <math>\text{FeSO}_4</math></i>	White ppt.	white ppt.

Student reported:	<u>Unknown A</u>	<u>Unknown B</u>
	$\text{H}^+$ , $\text{Na}^+$ , $\text{K}^+$ , $\text{NH}_4^+$ $\text{SO}_4^{2-}$	$\text{Na}^+$ $\text{OH}^-$ , $\text{SO}_4^{2-}$

TA returned report with following comments:

No $\text{K}^+$ ; missed $\text{NO}_3^-$	No $\text{SO}_4^{2-}$ ; missed $\text{Cl}^-$ , $\text{CO}_3^{2-}$ , and $\text{K}^+$
--	--

From the student's notebook record, can you list for each of the tests if there were any ways in which he misinterpreted his results or any errors he made in carrying out the tests or in supplementing them?

Unknown A

Unknown B

We also discussed the general financial stringency of the Lab and the possibility of using some of the Regents' management fee to help in this connection; such uses as providing money for foreign travel were mentioned.

Victor Zackay dropped in to see me at 3:45 p.m. and, over a cup of tea, we discussed his interesting visit with Chairman Schlesinger together with Spofford English in Washington a week or two ago. He had many insights to report on the attitudes of Schlesinger toward research.

I went home and took my usual hike with Suki, had dinner, and then went to a meeting of the Citizens Task Force of the East Bay Regional Park District, which was held at Skyline High School on Skyline Boulevard in Oakland. The agenda of the meeting is attached. I turned in my committee preference sheet, marking the Subcommittee to deal with Trails as my first choice.

Thursday, November 9, 1972 - Berkeley

Bob Silva called at 8:30 a.m. He reported on his trip to Los Alamos on his way home to Oak Ridge from his visit with us the week before last. He said that the Los Alamos chemists are ready to cooperate and send people to Berkeley whenever we are ready. He said he thought that it might be worthwhile to send a bombarded target to Los Alamos so that they could run through their system to look for fission products and so forth.

I called Mary Jefferds at 9:45 a.m. to congratulate her on winning a place on the EBRPD Board of Directors in Tuesday's election. She defeated the incumbent, Paul Harberts.

I called Bill Wenzel just before 10:00 a.m. to discuss yesterday's meeting with the Regents committee. I told him that I was pleased that he had brought up the use of management fee money and noted that we also need some money for entertainment. He said he appreciated my support for the continued existence of the Bevatron. We also discussed matters in connection with John Teem's visit this Friday and his impressions of the new administration in the AEC.

Christoph Schmelzer dropped in at 10:00 a.m. to discuss further the collaboration between LBL and GSI, and we seem to be coming to agreement. After this, we walked up to the SuperHILAC Building where we conferred further with Ghiorso and Main about our general arrangements.

Following this, I was joined by Bock, who had spent a good part of the morning visiting the 88" cyclotron, and we went to lunch in the cafeteria where we joined Hollander and Sessler at a table on the lower level. Our discussion was very general, largely in nonscientific areas.

I then returned to my office to join Alex Van Dyken, who had just arrived from Washington, and Earl Hyde. Earl and I reviewed with Van Dyken the general status of our program, emphasizing our budget problems. I asked Van Dyken, if worse came to worse and we reached



## EAST BAY REGIONAL PARK DISTRICT

11500 SKYLINE BOULEVARD/OAKLAND, CALIFORNIA 94619/TELEPHONE (415) 531-9300

BOARD OF DIRECTORS: FRED C. BLUMBERG, President; MARLIN W. HALEY, Vice President; PAUL J. BADGER, Treasurer  
PAUL E. HARBERTS, Secretary; JOHN A. MACDONALD, CLYDE R. WOOLRIDGE, DR. HOWARD L. COGSWELL □ RICHARD C. TRUDEAU, General Manager

*1525 11/8/72*

### CITIZENS TASK FORCE MEETING NOTICE AND AGENDA

Date: Wednesday, November 8, 1972, at 7:30 p.m.

Place: Room M-4, Skyline High School,  
12250 Skyline Boulevard, Oakland  
Skyline High School is located approximately three-quarters  
of a mile past the District Office on Skyline Boulevard.

### A G E N D A

1. Report of the Sub-Committee on Task Force Organization - Ann Christofferson.
2. Report by the Committee on Small Projects - Dr. Emmes.
3. OVERVIEW Report - Organization, Structure and Administrative Practices - Al Baum.
4. Staff Report on the History and Development of Existing Regional Parks - Jerry Kent.
5. General Discussion from the floor.

the end of the fiscal year with some deficit, would it be within the realm of possibility that we might get some relief? Van Dyken indicated that if we let him know at that stage, there might be a small possibility of relief. We also discussed the general new atmosphere at the AEC.

I called Charles Robbins at the Atomic Industrial Forum in New York to discuss with him some last-minute matters in connection with next week's conference in Washington. I told him about my invitation to Lewis Strauss to participate in functions of the conference that might interest him.

I called Kenneth Raymond at 3:15 p.m. and said that Gordon Halstead should not start using any computer time before July 1, 1973, and we will decide sometime during the Spring Quarter the annual rate at which he will spend. Raymond agreed to this.

At 4:30 p.m., Regent William Wilson called me from Los Angeles to follow up our discussion of the availability of a yacht on which to tour the Chinese scientists when they are here. His contact is out of the country until mid-December, so we dropped this. He commented that he really enjoyed being with us at the Lab yesterday.

Earl Hyde and I then took Van Dyken up to the SuperHILAC where, with the help of Ghiorso, we gave him a tour.

Suki and I took our usual hike to the water tank.

Friday, November 10, 1972 - Berkeley

Helen and Dianne flew to Washington, D.C. on the 8:45 a.m. United Airlines flight out of San Francisco.

Edward Teller called me at 9:40 a.m. to say that his wife Mici is still suffering with a cold, so they can't use the football tickets that I had offered them for Sunday (the 49ers-Colts game). I strongly recommended that he see a professional football game sometime. We agreed that the meeting with the Regents yesterday seemed to go well.

I had an hour's conference with Earl Hyde, starting at 10:00 a.m., about our budget emergency and ways of cutting down on expenses. I continued the discussion later with Earl at lunch in the cafeteria.

Bill Bevan called me to review several AAAS matters. He has hired Frances Quinn to oversee the fund-raising in November and December for the Mexico City meeting. He said they have had some difficulty reaching Anne Keatley about the invitation to the Chinese scientists to attend the December meeting. He felt, and I agreed, that the invitation should be addressed to the Head of the Delegation and sent in care of Anne (rather than to her for them). I noted that the chances of their accepting are not great because they will have been on the road so long. Bill told me that a possible visit to President Echeverria at the end of this month is cancelled. He said that CONACYT is getting a lot of bad press just now, so this doesn't seem to be the best time to announce the joint meeting down there.

Friday, November 10, 1972 (con't)

At 1:10 p.m., a number of key staff of the Nuclear Chemistry Division (Earl Hyde, Bernard Harvey, Joseph Cerny, Frank Stephens, Richard Diamond, Arthur Poskanzer, Matti Nurmi, Albert Ghiorso, Wladyslaw Swiatecki, Luciano Moretto, David Shirley, Tom Parsons, and I) met with Dr. John Teem, who, on January 1, 1973, will assume the position of Director of the AEC Division of Physical Research. Also present were Director Edwin McMillan, Harold Fidler, George Pappas, Daniel M. Miller, Donald K. Stevens (Acting Director), A. R. Van Dyken, R. D. Thorne, and Don E. Reardon. The agenda for his visit is attached.

After some introductory remarks in which I briefly reviewed the history of the Division and its function, including reference to the fact that Division personnel have discovered or been involved in the discovery of all the transuranium elements to date, I introduced the following six speakers who spoke on their programs: Harvey, Cerny, Stephens, Poskanzer, Shirley, and Ghiorso. I also mentioned some of the other programs such as those of Parsons, Swiatecki, Moretto, and Hollander and Sessler, and the Users' expectations of the SuperHILAC program and the SHEIKS program.

Following this, the AEC group went in a bus along with Ghiorso, Hyde, Reardon, and Fidler to the HILAC Building (Thorne left us at this point to go to the San Francisco Airport to meet Chairman Andronik Petrosyants of the Soviet State Committee on Atomic Energy, who is planning to visit SLAC at Stanford tomorrow). Ghiorso gave Teem and his associates a complete tour of the SuperHILAC. In the course of this, I mentioned to Teem and also to Miller--as I had yesterday to Van Dyken--the idea of making the Berkeley SuperHILAC into a national heavy ion facility by expanding some of the operating space, budget, and equipment. I also mentioned to Teem the dire financial situation that faces the Nuclear Chemistry Division and the consequent need to discharge a large number of people both in Buildings 70 and 70A and at the SuperHILAC.

After this, we visited the 88" cyclotron where Harvey and Cerny gave an explanatory tour. In the course of this, Teem reminded me that we had met when he was working for Electro-Optical Systems, Inc. in Pasadena on the occasion of a briefing that he and Abe Mordecial Zarem gave me in the Commission Conference Room some eight or nine years ago. Following this, Teem continued on his tour to visit the Inorganic Materials Laboratory for a briefing by Brewer and Zackay and the conference room in Building 50B where he was briefed by Hollander and Sessler on the Lab's Energy and Environment programs. During this time, I conferred with Hyde and Ghiorso in my office, discussing further our stringent budget problems and our plans for helping to meet the budget limitations by being forced to discharge a number of personnel.

I attended the dinner for John Teem in the Latimer-Lewis Room of the Faculty Club. Present were Teem and his AEC associates, Dan Miller, D. K. Stevens, Enlo Ritter, A. R. Van Dyken, G. W. Wheeler, D. E. Reardon, and from LBL Ed McMillan, Bill Wenzel, Ed Lofgren, Earl Hyde, Jack Hollander, Harold Fidler, Leo Brewer, Victor Zackay, and

FINAL

# 500

309a

Agenda for Visit to Lawrence Berkeley Laboratory  
Dr. John Teem  
Friday, November 10, 1972

- 8:30 Conference Room, Bldg. 50B  
General Remarks E. M. McMillan
- 8:45 Discussion of Physics Program  
W. A. Wenzel, G. F. Chew,  
K. M. Crowe, T. Elioff,  
J. A. Kadyk, D. Keefe,  
L. J. Laslett. H. M.  
Steiner, H. A. Shugart
- 9:15 Central Computer - This includes a CDC 7600 and two CDC 6600's. It is operated as a national facility, performing both batch and interactive jobs for a variety of local and remote users.  
J. A. Baker, R. J. Harvey,  
E. R. Beals, L. T. Kerth
- 9:30 Data Analysis - Three major optical systems (Flying Spot Digitizer, Cobweb and the Spiral Readers) support the large effort in bubble and streamer chamber research. Several smaller devices are used for optical spark chamber analysis.  
G. H. Trilling, R. P. Ely,  
A. H. Rosenfeld, F. T.  
Solmitz
- 10:00 184-Inch Cyclotron - This is operated as a national facility and is central to the medium energy program. A major improvement program is planned to increase the intensity and the experimental capability.  
K. M. Crowe, O. Chamberlain
- 10:30 Electron Ring Accelerator - This is the most promising activity in collective effect acceleration and has a wide variety of applications. This development is expected to provide a novel new accelerator in LBL's long-range plan.  
D. Keefe, G.R. Lambertson,  
J. M. Peterson
- 10:45 Superconductivity - Both pulsed and d.c. magnets have been developed. The latter are for use in special beam transport applications, the former will be valuable as energy boosters or in very high energy colliding beam facilities.  
W. S. Gilbert, R. B. Meuser,  
F. Voelker
- 11:00 Bevatron - The current program includes weak and strong interaction kaon physics, elementary particle resonances and heavy ion research. Instrumentation includes multiwire proportional chambers, spark chambers, solid state counters and the streamer chamber. Active improvements will produce increased intensity of primary and secondary beams, the availability of polarized beams and (with Bevalac) a wider capability in heavy ion beams.  
E. J. Lofgren, W.D. Hartsough,  
T. Elioff, H. A. Grunder





George Pappas. The conversation was very general in the area of the future of basic research and of the AEC laboratories and federal support of science. Teem was interested in our view of the future for LBL and we gave him a number of optimistic views and emphasized the unique capabilities of the Lab and its cooperation with campus faculty. I predicted that some 30-40% of the Lab's effort in 1980 would be in the energy and environment field. Teem advocated basic research leading to practical applications, but didn't press this much.

I spent the night at home alone in the house, trying to keep Suki and Moses reasonably happy.

Saturday, November 11, 1972 - Lafayette - Washington

I drove to San Francisco Airport, parked the station wagon, and boarded TWA Flight No. 64, which left at 9:30 a.m. and arrived at Dulles Airport at 5:00 p.m. Van Dyken, Stevens, and Ritter were on the plane, which gave me the opportunity to talk further with Van Dyken about our research programs at LBL.

To my surprise, I was met by Stan Schneider, who drove me to Harrison Street, where I greeted Helen and Dianne who had arrived yesterday. Unfortunately, Helen left her briefcase in the taxi they took to the house and so lost her papers and checkbook. Dianne's friend Brendan Canary was there; she spent last night with Dianne and is spending tonight as well. Pete and Jane left this afternoon by train for New York (Brooklyn) where they are going to attend the wedding of Jane's mother tomorrow.

Helen, Andrew (Pete and Jane's roomer) and I had dinner together at home while Dianne and Brendan visited our neighbors, the Hawkes.

Sunday, November 12, 1972 - Washington

Helen felt ill this morning so she decided not to attend the football game. I rode to Kennedy Stadium with Stan and Renee Schneider, with Syd Gaarder also along, to attend the football game between the Washington Redskins and the New York Giants. The Redskins won, 27-13, scoring 14 points in the last three minutes.

The Schneiders drove me to the Sheraton Park Hotel where I participated in the Formal Opening Session of the Joint International meeting of the Atomic Industrial Forum and American Nuclear Society; the theme was "World Energy Problems: Nuclear Solutions." John M. McGurn, General Chairman of the ANS International Winter Meeting and Chairman of the Board of the Virginia Electric Power Company, presided and introduced the speakers after giving his opening remarks. I spoke first, giving the keynote address. Sigvard Eklund, Director General of IAEA, spoke next, then Ingvar Sveland, Director General, OECD Nuclear Energy Agency, and finally W. Kenneth Davis, General Chairman, AIF International Conference and Vice President, Bechtel Corporation.

At the end of this session, the participants at the Opening Session went up to the balcony and were interviewed, individually, by

Ed McGlocklin of Channel 12 TV, Richmond, Virginia. I then went downstairs to the "Nuclear World '72" Exhibition, where I met Helen, who had spent the day at home. Here Helen and I stood in a reception line with Charlie and Pauline Robbins, Mr. and Mrs. McGurn, Mr. and Mrs. Davis, Dr. and Mrs. James Lilienthal (president of ANS), and Mr. and Mrs. Howard Winterson, President of AIF. Among the people we met in the course of the evening were Chairman Andronik Petrosyants of the USSR State Committee on Atomic Energy, and his assistant Boris Semenov; Fred and Edrey Albaugh; Gerald and Jo Tape; Mr. and Mrs. Lester Kornbleth; Mr. and Mrs. Ernest Tremmel; Sid Siegel; Walker Cisler; W. B. McCool; Justin Bloom; Joe Gratton; and Jules Gueron.

Helen and I took a taxi to Harrison Street. Dianne and Brendan had dinner at the Hot Shoppes on Connecticut Avenue at Yuma Street.

I called Ray Larson, who is now retired and spends the summers in northern Michigan where he is building a log house on Lake Michigamme, to make arrangements to get from him the "Nikolina" record, sung by Olle i Skratthult, which Helen Marie Swanson is presenting to me.

Monday, November 13, 1972 - Washington - Rockville

After breakfast with Helen, I took a bus to the Shoreham Hotel, met in the Tudor Room with the participants of the program, "Nuclear energy and the Quality Life," and went to the Regency Ballroom where the program took place before an audience of more than 2,000.

I gave my prepared opening remarks, then introduced the panelists, who gave their presentations in turn. Thomas L. Kimball (Executive Vice President, National Wildlife Federation) spoke first on "The International Environment," followed by Richard E. Balzhiser (Assistant Director of Natural Resources, Office of Science and Technology, Executive Office of the President) who spoke on "The Role of Nuclear Energy in Preserving Environmental Values." John M. Hill (Chairman, United Kingdom Atomic Energy Authority) then spoke on "The Role of Nuclear Energy in the Total Energy Mix." The talks were followed by a general discussion with the audience and a panel made of Commissioner James T. Ramey, George J. Stathakis (Vice President and General Manager, Nuclear Energy Division, General Electric Company), and Ingvar Wivstad (Vice President, Electrical and Thermal Division, Swedish State Power Board). After the panel discussion, I read questions from the audience which the participants, including the panelists, responded to.

Following this, Hill, Kimball and I went to the Press Room and participated in a press conference from about 12:00-12:30 p.m. I answered questions on the time scale and funding for fusion, the need to preserve fossil fuels as a source of chemicals, the philosophy of the present Atomic Energy Commission, etc.

I then went to the Tudor Room to attend a special luncheon honoring international guests. People at my table included Sir John Hill and Ken Davis (the latter thinks the passage of Proposition 20 is such a setback for nuclear power that it will lead to serious power shortages in California).

At 2:00 p.m., Dick Allen (Vice President of GEOMET) and Charles Judkins (Treasurer) drove me to GEOMET headquarters at 50 Monroe Avenue in Rockville. Here I met in George Milly's office with Milly, Allen, Judkins, and Edward Ackerman (Board member of GEOMET and of Swedish parentage--name changed from Akerman). They reviewed for me GEOMET's activities and we discussed my possible association with it as a member of the Board.

I then toured the building with Milly and Ackerman and met, among others, Paula Petrovic (Milly's secretary), Leon S. Pocinki (of Health Service Analyses), Jay Gardiner (graduate of Harvard Business School), Roland Chew (meteorologist), Dr. David Hill (head of Technical Studies), JoAnn Langston (Vice President of GEOMET in Health Planning), Iz Enger (statistician; meteorologist), and R. Henderson (M.D.).

I rode with Ackerman to 1717 H Street where I met with Bob Hollingsworth and John Ryan in the former's office on the 11th floor. Hollingsworth gave me a complete briefing on AEC operations. He told me that, because of a directive from OMB to withhold already apportioned funds in the fiscal 1973 budget, a total of \$3 million was held back in the area of physical research, plus \$300,000 more to cover the SuperHILAC allotment--i.e., a total of \$3.3 million. I said we will probably need another \$100,000 to make SuperHILAC operations break even and that we will be in touch with Hollingsworth in late spring if this is necessary. Money may be available if some of that held back is released by OMB. Hollingsworth said that the money of the BEVALAC was apportioned to AEC by OMB, but then AEC had to hold it up in order to meet the requirements for total money to be held back as imposed by OMB. I described to Hollingsworth the desirability of making the SuperHILAC into a National Laboratory by providing some \$500,000 for additional building space and some \$500,000 additional budget; Hollingsworth and Ryan took note of this and will explore the possibility.

I had a bite to eat downtown, then met Helen at the Smithsonian Museum of History and Technology, where we attended the reception given by Westinghouse Electric Corporation from 7:30-9:00 p.m. Among the many people we talked to were Mason Willrich (still interested in spending his sabbatical next academic year at LBL), Senator and Mrs. Albert Gore, Commissioner and Mrs. William Doub, Maurice Timbs, Congressman Orval Hansen, Gerry Johnson, John Simpson, and Mr. and Mrs. John Nassikas.

Helen and I took a bus home. Mr. Canary came by at 10:00 p.m. to take Brendan home after her stay with Dianne. Pete and Jane returned home after midnight from New York with a rented truck full of furniture which Shirley had given them.

Tuesday, November 14, 1972 - Washington

I took a taxi in a driving rain to AAAS headquarters to attend the meeting of the AAAS Committee on Council Affairs, starting at 9:00 a.m. Present were Leonard Rieser, presiding, Homer Newell, George Spurgel, Garrett Hardin, Bill Bevan, Ward Goodenough, and Catherine Borrás. We followed the agenda (copy attached). We discussed the problem of "disaffiliation" of various societies with the AAAS which

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE  
1515 Massachusetts Avenue, N.W.  
Washington, D. C., 20005

Agenda

Meeting of the Committee on Council Affairs  
Tuesday, November 14, 1972, 9:00 A.M.  
AAAS Board Room  
Washington, D. C.

---

1. Items of Information

(a) Disaffiliation. Since the April meeting, two societies--the Herpetologists League and the American Society for Testing and Materials--have discontinued affiliation with AAAS. The American Malacological Union has not replied to an invitation from Dr. Bevan to reconsider its decision to disaffiliate.

(b) Second Arden House Conference. The dates of October 19-21, 1973, have been set for the Second Arden House Conference being planned by the Board of Directors. Members of Council have been invited to attend a special meeting at 9:00 A.M. on December 28 to discuss the issues to be taken up at the conference.

(c) Council motion on Mexican academicians. At the April meeting, Dr. Bevan informed the Committee of the investigation he had undertaken in Mexico in response to a motion adopted by Council last December, and reported that the Board of Directors was satisfied that it should not cancel the meeting to be held in Mexico City in the summer of 1973. The Philosophy of Science Association and the American Philosophical Association, on whose behalf the motion had been introduced, were so informed. In August, the chairman of the American Philosophical Association's Board wrote that his organization would not take part in the Mexico City meeting, and the president of the Philosophy of Science Association wrote that his Board would take up the problem in October. The AAAS Board considered the matter further at its October meeting and confirmed the earlier decision to proceed with plans for the Mexico City Meeting.

(d) Committee on Nominations. At the April meeting, the Committee selected the following persons as a slate of nominees for membership on the Committee on Nominations and Elections. All have agreed to serve if elected. Ballots have been mailed to Council.

Garland E. Allen  
Dorothy Bliss  
T. C. Byerly  
James S. Coleman

- 2 -

(e) Council hearing on bylaws. A special meeting of Council to discuss the final draft of the bylaws has been scheduled for 9:00 A.M. on December 27 in the Park Room of the Sheraton Park Hotel.

(f) Scientific Manpower Commission. During the past year and a half, as the Association's interest in problems of scientific manpower and training has grown steadily, a closer working relationship with the Scientific Manpower Commission has developed, and it now appears highly desirable that the Commission become formally affiliated with the AAAS. Accordingly, at its October meeting, the Board approved a proposal that SMC be designated a Participating Organization of the Association. Council approval, which is also necessary, is being sought by mail ballot.

2. Future Meetings. The Committee's open hearing on resolutions submitted for Council consideration at the Washington meeting is scheduled for December 27 at 2:00 P.M. in the Vinson Room of the Sheraton Park Hotel. The Committee will meet at the conclusion of the hearing.

The Committee will probably wish to meet early in 1973 to plan interim procedures for implementing the new bylaws. Members are requested to bring their engagement calendars with them so that a mutually convenient date may be selected.

3. Agenda for Council Meeting. It is the Committee's task to prepare the agenda for the formal Council meeting on December 30. A draft is attached (Tab A).

4. Resolutions. All resolutions received on or before November 14 will be distributed at the meeting.

5. Proposed Bylaws. The Committee's third draft of the proposed bylaws was mailed to Council members on September 6, together with a straw ballot and request for comments. The return is as follows:

Agree	252
Agree, with reservations	32
Disagree	11
No vote	5

Comments on the bylaws from Council members are enclosed as Tab B. Draft 4, incorporating the list of changes mailed to members of the Committee on November 2, will be available at the meeting.

William Bevan

November 7, 1972

led to a consideration of the disaffection of engineering societies with the AAAS. I emphasized that we must interest engineering societies in affiliating with AAAS as a necessary prelude to any large-scale expansion of AAAS membership (as contemplated by the Bolt resolution). We decided to refer Revelle's resolution on population control back to him for rewording and general reconsideration.

I met over a sandwich lunch with Frances Quinn and Bill Bevan to discuss our program of letter-writing to corporate executives to raise funds for the AAAS Mexico City meeting. After the letters over my signature have been sent out by Bevan, Fran will let me or Sheila know by phone, and I will follow up with phone calls. She will also clear other letters and matters by phone.

After lunch we continued with a discussion of the changes that have been suggested in the new bylaws. We adjourned at 4:15 p.m., at which time I met with Howard Greyber to discuss the constitution of the Local Committee and Advisory Committee for the AAAS meeting to be held in San Francisco in February 1974.

I then walked to Science Service headquarters and presided over a meeting of the Board of Trustees there. Present were Allen V. Astin, Bowen C. Dees, Julius Duscha, Milton Harris, O. W. Riegel, Edward W. Scripps, II, Gerald Tape, and Deborah P. Wolfe; Edward G. Sherburne, Jr., Dorothy Schriver, Kendrick Frazier, and Donald Harless. The agenda and minutes are attached.

We discussed the thorny problem of salary increases, especially for the writing staff of Science News, and voted a general salary increase with larger amounts for selected personnel based on merit. We voted to give a prospective buyer of Science Service buildings and land an option for 60 days to purchase this property at a cash price of \$500,000, at a cost of \$5,000 for the option. We received the report of the Committee on Science Service Mission (Dees, Chairman) and voted that the Committee continue its study in a more detailed fashion. In Executive Session, at the end of the meeting, we voted salary increases for Ted Sherburne and Dorothy Schriver.

We all, except Tape, had a buffet dinner at the Science Service headquarters. I then rode home with Dorothy Schriver in her car, dropping Sherburne on the way, with Duscha accompanying us.

Helen had lunch at Cora Goerlich's, went shopping with Winifred Reed, went to the British Nuclear Fuels, Ltd., reception for Sir John Hill at the Shoreham Hotel, and to the Gulf General Atomic reception at the National Gallery of Art.

Dianne went to the Reeds in the afternoon to spend the night with her friends Ann and Laura. Pete and Jane were home during the day and evening, not having to start work until tomorrow morning.

Wednesday, November 15, 1972 - Washington

I took a taxi to the Sheraton Park Hotel and went to the Park Ballroom to participate in the "Youth and the Atom" program. About 1,000 outstanding Washington area high school students were present

PRELIMINARY AGENDA

MEETING OF THE BOARD OF TRUSTEES OF SCIENCE SERVICE

Tuesday, November 14, 1972, 5:00 p.m.

Science Service Building

1. Approval of Previous Minutes
2. Report of Financial Advisory Committee
3. Salaries
4. Report of Committee on Science Service Mission
5. New Business
6. Next Meeting
7. Executive Session

##

## MINUTES

Meeting of the Board of Trustees of Science Service

Tuesday, November 14, 1972, 5:00 p.m.

Pursuant to call, the meeting convened at 5:00 p.m., with President Seaborg in the chair. The Recorder listed the following Trustees present: Allen V. Astin, Bowen C. Dees, Julius Duscha, Milton Harris, O. W. Riegel, Edward W. Scripps, II, Glenn T. Seaborg, Gerald F. Tape and Deborah P. Wolfe. Edward G. Sherburne, Jr., Director; Dorothy Schriver, Assistant Director; Kendrick Frazier, Editor, Science News; and Donald Harless, Business Manager, were also present. Trustees Norman Cousins, Gerald Holton, Jacob Rabinow, Frederick Seitz, Athelstan Spilhaus and John Troan were absent.

Minutes of the June 16, 1972 meeting of the Board were approved as distributed.

Mr. Sherburne presented an oral report of the Financial Advisory Committee and distributed to the Board members and Excess/Deficit Statement predicting a year-end estimate for fiscal year 1972-73 and a high/low estimate for fiscal year 1973-74. (See Appendix A)

Mr. Sherburne reported that Wallace Brode had presented to Science Service a \$15,000 grant from the Engineers and Scientists Committee, Inc. of the People to People Program, the interest of which is to be used to finance the distribution of Science News to underdeveloped countries.

Mr. Sherburne explained that it is still too early to tell what impact the Science News price increase has had; that although circulation is down, revenue is ahead of last year, due in part to the large number of advance renewals received because of the price increase. He reported that deferred revenue accounting has now been installed and the next two



year's subscription revenue has been invested in building and loan companies.

The Doubleday book royalty income decrease of \$35,000 was reported and Mr. Sherburne explained that while this might increase next fiscal year because of anticipated renewed promotion of the program in the spring, it could not be predicted with any assurance.

The Director stated that salary increases were being considered, and he asked that Mr. Frazier be allowed to present a report on the editorial staff demands for salary increases and adjustments. Mr. Sherburne added that in view of the financial status of Science Service, he would recommend no raises at the present time, but if the Board decided to honor the request, he would recommend that any increase be made across the board and not to specified staff members. After lengthy discussion, during which it was established that Science Service personnel is, as a whole, very low-salaried, a motion was made, seconded and carried, that salaries of all staff be increased by 4%, and 1% of all salaries be put in reserve for merit raises and inequity adjustments to be determined at the discretion of the Director for the remainder of this fiscal year. Future increases will be considered by the Board at yearly intervals.

The Director reported that an offer had been made to buy the Science Service buildings for a net figure of \$500,000, and explained that about \$7,000 per year would be saved if we could rent office space. Mr. Harless presented a copy of the sales agreement and after considerable discussion the Board moved, seconded and passed a motion to accept an option for 60 days on the sale of the Science Service building for \$500,000, with a non-returnable deposit of \$5,000.

Dr. Dees presented the report of the Committee on Science Service Mission and urged that the Board view this as an interim report. He

explained that the Committee was not suggesting a change in the mission of Science Service but rather, a change in the language of the mission from "popularization of science" to "public understanding of science" with the understanding that this included technology. He requested that the Board reexamine existing programs to see if they fall within the mission and to examine any new programs for viability within the guidelines.

It was the consensus of the Board that Science News must be made to succeed, for if it fails, Science Service will also fail. The need for a close look at the market of Science News was stressed.

A motion was made, seconded and carried, that the report of the Committee on Science Service Mission be adopted as an interim report and circulated to all members of the Board with a request for comments. After receipt of Trustees' comments the Committee will meet and prepare a final report. Members of the Board congratulated Dr. Dees and his committee for the excellent report.

The date for the Annual Meeting of the Board was set for 5:00 p.m., April 25, 1973, in the offices of Science Service. Dr. Seaborg asked that the Director poll the Board later for a possible meeting date in January.

Following Executive Session, the meeting adjourned.

Dorothy Schriver  
Recorder

EXCESS/DEFICIT

<u>Item</u>	<u>Budget</u>	<u>72-73</u>		<u>73-74</u>	
		<u>Est</u>	<u>Low</u>	<u>High</u>	
SN	-94,000	-78,000	-53,000	+72,000	
TH	-15,000	-20,000	-20,000	0	
SCA	-17,000	-10,000	-10,000	-10,000	
STS	0	0	0	0	
ISEF	-21,000	-16,000	-16,000	-16,000	
Book Pub	+71,000	+35,000	+35,000	+35,000	
Invest.	+6,000	+6,000	+21,000	+21,000	
NSF oblig.	0	0	-21,000	-21,000	
Subtotal	-70,000	-93,000	-64,000	+81,000	
Salary incr	0	0	-13,000	-13,000	
<u>TOTAL</u>			-77,000	+68,000	
NSF grant	100,000	100,000	0	0	
SN cap. rev.	90,000	150,000	40,000	70,000	

Wednesday, November 15, 1972 (con't)

with their teachers. Joseph C. Rengel (Executive Vice President, Nuclear Energy Systems, Westinghouse Electric Corporation, and Chairman of the Atomic Industrial Forum's Committee on Public Affairs and Information) made some welcoming remarks and Hal Stroube (Director of Communications, Potomac Electric Power Company) made some opening remarks as Program Host. Then Steven Fuller (Virginia Polytechnic Institute and State University) gave a lecture-demonstration, "This Atomic World." Stroube then introduced me and I gave my talk, "Nuclear Progress in the 1970's," a summary of transuranium element research and of peaceful uses of nuclear energy, illustrated by slides and followed by some written questions from the audience.

After this I went with the students to the "Nuclear World '72" Exhibition on the lower level of the Hotel. Here I talked to a number of students and had my picture taken with several groups.

I then walked over to the Shoreham Hotel and went to the Blue Room to attend a special luncheon at which Chairman Andronik Petrosyants of the USSR State Committee on Atomic Energy was the featured speaker. I sat at the head table with Walker Cisler, master of ceremonies; Petrosyants; Boris Semenov; Herman Pollack; Gersh Budker; Clarence Larson; James Lilienthal; Ingvar Sveland; Ingvar Wivstad; H. Schnurr; Dixy Lee Ray; Francisco Pascual; William R. Gould (incoming President of AIF); and Lewis Strauss. Upon greeting Commissioner Ray, I urged her to serve as a AAAS Board member if elected and she agreed to do so. Lewis Strauss was there at my suggestion and seemed to enjoy it, sitting next to Cisler and Gould. I sat between Petrosyants and Semenov. At the end of the lunch, Cisler introduced the head table guests, then introduced Petrosyants who gave a talk summarizing the Soviet nuclear power program with translation into English by Semenov.

After lunch, I talked to Stan Benjamin of the Associated Press, saying the U.S. fast breeder program is not behind that of the USSR because we use a components-testing approach. I then talked to a number of friends in the halls of the Shoreham and Sheraton Park Hotels and at the "Nuclear World '72" Exhibition. William S. Johnson, Sr., Vice President of Eberline Instrument Corporation, asked if I would like to serve on their Board of Directors, and I declined due to pressure of time. John D. Murphy, Chairman of Amalgamated Energy Industries, Inc., said he will write me about some possible connection with his company.

I then took a taxi home and made a number of phone calls. I returned a call to AAAS and, as a result, agreed to write a 250-word resolution of appreciation for retiring Board member David Blackwell. I called Sheila, who brought me up-to-date on my mail, etc.

I returned a call from Anne Keatley at the National Academy of Sciences to discuss further details concerning the impending visit of the Chinese scientists. We should find, through Shing Chern, some Chinese-speaking scientists and students to help with the interpretation (only three understand English). They may want to see a farm near San Francisco, possibly on Sunday afternoon, December 10, and

Anne will let us know about this. We agreed that any dinner on Wednesday night, December 13, either at my home or that of Chern, could be left for decision until the Chinese arrive in the United States next Monday. They may not want any such function that evening. There should be a final press conference in San Francisco late Thursday afternoon which Emil Smith, Marvin Goldberger and I might attend. She will be in touch with Art Rosenfeld regarding the guest list for the farewell dinner Thursday night. Chou Pei-yuan (formerly of Caltech) has written a number of people in the United States (e.g., Dr. Pseng and Dr. Pief Panofsky of SLAC), leading them to believe they should entertain the Chinese scientists which, of course, is impossible; Chou is a very important person in China and greets all U.S. scientific visitors.

Helen and I took a taxi to the Shoreham Hotel and went to a reception in the Tudor Room for head table guests. Here we had further opportunity to talk to Petrosyants and Semenov. After the reception, we went to the Regency Ballroom for the joint AIF-ANS Banquet. I sat at the head table with James Lilienthal, John Simpson (President-Elect of ANS), M. J. Feldman, Carlo Salvetti, Richard Balzhiser, Kenneth Davis, N. L. Franklin, Tamaki Ippomatsu (Chairman, Japan Atomic Power Company), Beatrice Willard (Council of Environmental Quality), Peter G. Peterson (Secretary of Commerce), John Landis, Howard Winterson, Pierre Hewit, John McGurn, William R. Gould, James T. Ramey, Andronik Petrosyants, T. Keith Glennan, and Harry Smyth. Lilienthal served as Master of Ceremonies and introduced the head table guests. Glennan presented, on behalf of AIF and ANS, the Henry D. Smyth Nuclear Statesman Medal, and Smyth responded briefly (with some voice problems due to a recent illness). Gould then introduced Peterson, who gave the banquet address. It was a good speech, emphasizing the importance of economics and balance of payments in meeting our energy requirements. After the dinner, Helen and I went to the Empire Room to attend a huge reception given by the General Electric Company, then took a taxi home.

Dianne and Helen had spent much of the day at home. Pete and Jane came home from work at around 6:00 p.m.

Thursday, November 16, 1972 - Washington

Arnie and Betsy Fritsch and Fred and Edrey Albaugh came by our house and had breakfast with Helen, Dianne, and me. Fred, Betsy and I rode to the Shoreham Hotel with Arnie in his Volkswagon. Edrey remained at our house with Helen and Dianne for a while.

I attended the session on "The Limits of Growth" in the Regency Ballroom. In his talk here, David Freeman suggested that the Regulatory Function be separated from the AEC, but did seem to suggest that the AEC play a broader role in the development of energy in general.

I walked over to the Sheraton Park Hotel with Justin Bloom, dropped off a copy of my opening remarks for Monday's session on "Nuclear Energy and the Quality of Life" for Norman Jacobson, manager of publications for ANS. I then attended a reception in the Jefferson Room and, after this, the ANS-AIF luncheon in the Park Ballroom; George Zipf, President of Babcock-Wilcox Company, presided. He

introduced Representative Orval Hansen as the speaker of the day, substituting for Mel Price. Hansen spoke on the general state of affairs in nuclear affairs in the Joint Committee on Atomic Energy.

I then rode with Hansen to the hill, where I called on Craig Hosmer in his office in the Rayburn Building. I briefed him in general on the state of the SuperHILAC and the BEVALAC and the need to get release of funds from OMB for the latter; he indicated he would try to help. I invited him to visit us at LBL and he said he might do this just before Christmas.

After this, I walked part way, then continued by taxi, to Science Service headquarters to sign a contract for sale of its building. I then walked to the Dupont Plaza Hotel, where I attended the annual meeting of the National Academy of Public Administration in the Empire room (agenda attached). We sat around a large U-shaped table--about 40 of us. Here William D. Carey (Senior Vice President, Arthur D. Little, Inc.) spoke on the general theme, "Problems, Progress and Reform in the Federal Government."

At 6:15 p.m., I took a taxi to the State Department where I met Helen and attended a reception given by the Department of State and AEC for the foreign guests at the Joint AIF-ANS Conference. We met many of our old friends. I talked to Jim Schlesinger about the BEVALAC and budget problems in general. He knew about William French Smith's letter to Cap Weinberger. He thinks the only additional contact with Weinberger that would do any good would be for Governor Reagan to contact him. I had a talk with Herman Pollack about his work.

Helen and I rode home with the Tapes, along with the William Goulds; they all went on to the Loftnesses.

Dianne visited her friends Rhoda McFarlane and Sarah Luria today. Pete worked the day shift, so we saw him in the evening when we returned. Jane worked the swing shift, so we didn't see her. Ray Larson delivered the Olle i Skratthult "Nikolina" record to us today.

Friday, November 17, 1972 - Washington - Houston

Helen and Dianne rode to Dulles Airport with Cora Goerlich and flew home to San Francisco on United Airlines.

I took a taxi to the DuPont Plaza Hotel where I attended the annual meeting of the National Academy of Public Administration in the Empire Room (agenda attached).

President John Millett presided. He introduced me as a new member. I met and talked to Dwight Waldo, Sam Hughes, Bill Warne, and other old friends. Roy W. Crawley, the new Executive Director of the Academy, presented the 1972 Annual Report of the Academy. (Rhonda Gaspar is Crawley's secretary.) We approved a motion to join the American Consortium for International Public Administration. I met Frederick Mosher, formerly of the Department of Political Science at Berkeley, now at the University of Virginia. We heard the reports of the Chairmen of the Standing Committees. This included a report by

## NATIONAL ACADEMY OF PUBLIC ADMINISTRATION

Annual Meeting  
 DuPont Plaza Hotel  
 November 16-17, 1972

ProgramNovember 16, 1972

- Noon to 1:30 p.m. Luncheon for Standing Committee Members. Embassy Room.
- 1:30 to 4:00 p.m. Standing Committee Meetings:
- Administration of Justice and Regulatory Administration--  
 Gallery Room.
- Environmental and Resource Management--Cosmos Club.  
 (Note: This committee will have a  
 a luncheon-meeting in Room A, Cosmos Club.)
- Human Resources and Urban Affairs--Executive Room.
- Public Management and Machinery of Government--Plaza  
 Room.
- 4:00 to 6:00 p.m. Subject: Problems, Progress, and Reform in the Federal  
 Government--Leadership and Management. Speaker:  
 William D. Carey, Senior Vice President, Arthur D.  
 Little, Inc.--Embassy Room.
- 6:00 to 7:30 p.m. Dinner--Embassy Room.
- 8:00 to 10:00 p.m. Subject: Problems, Progress, and Reform in the Federal  
 Government--Structure and Organization. Speaker:  
 Herbert Roback, Staff Director, Committee on Government  
 Operations, U.S. House of Representatives--Embassy Room

November 17, 1972

- 9:00 to 10:30 a.m. Business Meeting--Embassy Room.
- 10:30 a.m. to Noon Reports by Standing Committee Chairmen--Embassy Room.
- Noon to 1:30 p.m. Subject: The Intergovernmental Personnel Act. Speaker:  
 Mrs. Ersa Poston, President, New York Civil Service  
 Commission, and Chairman, President's Advisory Council  
 on Intergovernmental Personnel Policy--Embassy Room.
- .....
- 2:00 to 4:30 p.m. Standing Committee Meetings:
- Education for Public Administration--Academy Conference  
 Room.
- International and Cross-Cultural Administration--  
 The Brookings Institution, Room 200.

November 16, 1972

National Academy of Public Administration

Business Meeting--November 17, 1972

Agenda

1. Introduction of new members present and identification of all elected.
2. Memorial resolutions--Roscoe Martin (Dwight Waldo) and Wallace Sayre (Herbert Kaufman)
3. Minutes of the October 25, 1971, business meeting
4. Report of the Committee to Nominate Principals to the Board of Trustees
5. Election of New Trustees
6. 1972 Report of the Chairman
7. Report of the Treasurer
  - Review of 1972 Audit Reports
  - Review of 1973 Budget
8. Other business



Warne on the work of the Environmental and Resource Management Committee which he would like me to join.

After the meeting, I had lunch with the group in the Empire Room, then took a taxi to National Airport and boarded Delta Airlines Flight No. 711 which left at 2:00 p.m. and arrived in Houston at 5:10 p.m. I was met by W. O. Milligan who drove me to the Rice Hotel, where I checked into Room 1426. Mr. and Mrs. David R. Keck came by to pick me up and we went to the Houston Oaks Hotel. Keck is now program chairman and is past chairman of the Manufacturers Committee of the Houston Chamber of Commerce and works for Tenneco Company. We went to Consort II to attend the pre-dinner reception and Ninth Annual Dinner of the Manufacturers Committee. About 125 people were present, including a number of old friends, such as Dr. and Mrs. Clark Goodman. I sat at the head table with Mr. and Mrs. Wally (Jean) Rankin (Chairman of the Manufacturers Committee and Works Manager of Houston Branch, Armco Company), Mr. and Mrs. Benjamin Woodson (President of the Houston Chamber of Commerce and President and Chief Executive Officer of American General Insurance Company), Mr. and Mrs. William Kistler, Jr. (Vice Chairman of the Manufacturers Committee and with Hughes Tool Company), Mr. and Mrs. Keck, Mr. and Mrs. Leonard S. (Kathy) Patillo (Executive Vice President of the Houston Chamber of Commerce), and Mr. Fred van Osdall (Personnel Manager of Goodyear, and well acquainted with the Portsmouth uranium enrichment plant operation). I sat between Wally Rankin and Mrs. Woodson. Rankin served as Master of Ceremonies, called on Mr. Woodson for some brief remarks, then introduced me. I spoke on "Energy and Your Future," including some personal remarks about Ishpeming, the Berkeley Chancellorship, and the naming of transuranium elements at the beginning. The talk was followed by some questions about the breeder reactor and fusion.

Saturday, November 18, 1972 - Houston

I had breakfast in the Rice Hotel coffee shop with Dr. and Mrs. Henry Eyring and E. J. Corey. I spent the morning in my hotel room reading papers forwarded to me by Sheila from my LBL office.

I had lunch in the coffee shop with Corey. After, I worked on a second packet of mail from Sheila, then had dinner in the Gold Room with members of the Scientific Advisory Board of the Welch Foundation--W. O. Baker, George W. Beadle, E. J. Corey, Henry Eyring, C. S. Marvel, and W. O. Milligan. We then went to the Conference Room on the 20th floor of the Bank of the Southwest Building for the first session of the Scientific Advisory Committee. We discussed arrangements for the presentation of the first Robert A. Welch Award (\$75,000) to Karl Folkers at the Welch Conference banquet at the Rice Hotel next Tuesday night. Milligan told us that the Welch Trustees have decided to limit the total to be awarded to grantees at this time to \$4,100,000. We then reviewed the proposals for renewal of grants.

When I returned to my room, I called home and learned from Helen that everything is in good shape there. Steve, Eric, Dianne, and she went to the Big Game today which Berkeley won by scoring a field goal on the last play, 24-21. I wished Eric a happy birthday (actually yesterday). Helen had Eric, Steve, Dianne, Bruce Howe, Alan Schiffer, Bill Cooksey, Joan Duffield, and Ron Mandella for dinner.

Sunday, November 19, 1972 - Houston

I had breakfast in my room, then walked over to the Welch Foundation headquarters to attend the continuing meeting of the Scientific Advisory Board. We went over the Voluntary Proposals. We decided that Beadle would organize Welch Conference XVIII (November 11-13, 1974) on the subject "Immunochemistry."

We walked to the Rice Hotel and had lunch together in the Stinson Room. I worked further in my room on Travels in the New World and Chemistry 1A material.

I had dinner in the Stinson Room with fellow members of the Board and Milligan and members of the Board of Trustees of the Welch Foundation--Roger Wolfe, Jack Josey, Pete Wehner, and Robert Doherty (new member and nephew of the late Wilfred Doherty). After dinner we all went to the Welch Foundation headquarters and held our meeting at which the SAB made its recommendations to the Trustees concerning grantees, discussed plans for Tuesday night's award ceremony, etc.

Monday, November 20, 1972 - Houston - Berkeley

I took a taxi to Houston Intercontinental Airport, where I boarded Continental Flight No. 93, leaving at 7:30 a.m. and arriving in San Francisco at 10:40 a.m.

I drove directly to the Berkeley campus and went to my office in Latimer Hall for the remainder of my regular office hour. I then joined the Chemistry Department faculty for lunch in the Howard Room of the Faculty Club and, after, taught my Chem 1A section in Room C. I then walked up the hill to my office.

I called Al Ghiorso to get caught up on work at the SuperHILAC. I conferred with Hyde for about an hour concerning the desperate budget situation and our plans to release a number of people.

Helen came in to drive me home in the Volvo since we left the station wagon for Dave to drive to Davis tonight. Suki and I took a hike to the water tank. While working on my accumulated papers, I watched on TV the Washington Redskins-Atlanta Falcons football game, which the Redskins won, 24-13. (Pete and Jane were at the game in Kennedy Stadium.)

Tuesday, November 21, 1972 - Berkeley - Burlingame

Helen drove me to work so that she could have the flat tire fixed (the spare, which was changed by the AAA yesterday at my parking place on the hill) after Dave returned the car to us.

I attended the regular meeting of the SuperHILAC planning group in the conference room of the HILAC Building. Ghiorso, Nurmia, Nitschke, and the Alonsos were present. Ghiorso described some DE/dx detection schemes he has in mind. The SuperHILAC has been delivering some krypton beam from the Adam source, making experiments by the Diamond-Stephens group possible.

Tuesday, November 21, 1972 (con't)

During the morning, I called Chancellor James Meyer at Davis, Philip Lee at the UC Medical School, and Vice Chancellor David Saxon at UCLA to ask if they would serve on the Advisory Committee for the AAAS Annual Meeting to be held in San Francisco in February 1974. They all consented.

At 10:30 a.m., Tom Parsons brought Boris Myasoyedov (Laboratory Head, Laboratory of Radiochemistry, Institute of Geochemistry and Analytical Chemistry, USSR Academy of Sciences) to my office. The latter said that he had been enjoying his visit to LBL. He indicated that Flerov and Oganessian are going to visit the United States, including Oak Ridge and LBL, at the end of February or early March next year. He mentioned to me that he is somewhat embarrassed to be a member of the Committee on Inorganic Chemistry of the IUPAC--the committee that is concerned with the naming of chemical elements--although he admitted that they had been avoiding the problem of naming elements 104 and 105. I asked him to call Spitsyn when he gets back to Moscow and remind him to send me the transcripts of my three talks at the Symposium on the Chemistry of the Transuranium Elements after editing by Kosyakov as soon as possible. I also suggested that he might point out to Mikheev the advantages of working at Oak Ridge during his coming stay in the United States. I gave Myasoyedov an autographed copy of Nuclear Milestones.

I called Molly Reeves in response to her letter of November 14. I told her that we had changed the date of the next CUWA meeting to December 3, and she said she could attend. We agreed that this would be the occasion to discuss a Citizens Task Force field trip day for the Huckleberry Trail.

At 11:00 a.m., I went to PSL to hear George Pimentel's Chem 1A lecture, then walked back up the hill and had lunch in my office.

I called Ed Cornish at the World Future Society in Washington at 12:45 p.m. to ask if he is acquainted with Howard Didsbury, who has written me about being on the Advisory Council of the Program for the Study of the Future. Ed indicated that he thought this was a good thing. He said that Didsbury has been a member of the WFS for some time and has been instrumental in getting Newark State College interested in the future. He thinks the program is thoroughly respectable. He told me that his group couldn't get a session arranged for the December AAAS meeting, but will have an exhibit.

Quentin Koller came by and shared a cup of coffee with me while I was lunching at my desk. I then rode with him down to the Kevex Corporation in Burlingame. After greeting Dick Frankel, Peggy Rogers, and others, Frankel took me on a short tour of the laboratory.

At 2:00 p.m., we went into Frankel's office and I presided over a meeting of the stockholders. Present were Richard S. Frankel, President; Edward Woo, Vice President and Treasurer; and Mortimer H. Herzstein, legal council, who took a number of notes during the meeting. Peggy Rogers took the minutes. A total of 12 stockholders, employees of the Kevex Corporation, were there.

Tuesday, November 21, 1972 (con't)

In presiding over the meeting, I followed the agenda (copy attached). Basically, we accepted the annual report for the year ended July 31, 1972; re-elected the Directors for another year (Seaborg, Frankel, Woo, and Lesser); voted approval of the 1972 qualified stock option plan for employees; changed the date of the Annual Meeting to the fourth Tuesday of September; confirmed the actions of the Board of Directors taken since the last meeting of shareholders, since September 25, 1967; and heard a progress report by President Frankel.

Following the shareholders' meeting, I presided over a meeting of the Board of Directors (copy attached) in which we re-elected the corporate officers (Frankel, Woo and Lesser).

After the meetings, I further toured the premises with Frankel, met the employees, and learned more about the operation. Then I came back to Frankel's office where he and I met with Peter J. Wardle (partner, Henry F. Swift and Company) and Richard E. Boesel, Jr. (Vice President, Hayden, Stone, Inc.). Wardle was introducing Boesel with the prospect that Hayden, Stone might serve as underwriters for the stock issue when Kevex Corporation goes public about a year from now. Frankel and I described the history and present status of Kevex to Boesel, who seemed quite interested. Following this, they were taken out into the working area and given a demonstration of an x-ray fluorescence apparatus. I learned in the course of the conversations that the two main competitors of Kevex are the ORTEC Division of EG&G and especially EDAX of Chicago, a very aggressive outfit of which Charles Walsh is President.

At 3:00 p.m., I returned a call from President Hitch. He told me about his talk with James Schlesinger, to which Schlesinger had alluded during my conversation with him last week in Washington, indicating that Schlesinger would find it difficult to continue to support operation of the Bevatron in view of the budget stringencies set up by Cap Weinberger. I indicated that in my conversations with Schlesinger on this, he had suggested that I should perhaps approach Reagan for help to convince the Nixon Administration of our need to continue the Bevatron, upon which the viability of the BEVALAC depends, and Hitch replied that he didn't think this would be helpful. He said that perhaps Regent Edward W. Carter--who he said had served as host at a very successful fund-raising dinner for President Nixon in Los Angeles during the recent campaign--might be worth exploring.

I left Kevex at 3:45 p.m. with Koller and he drove me back to my office. There I returned another call from President Hitch. He told me that he had talked to Carter, who said he would try to help us. The opportunity might come when he hosts a dinner for the President and key administration officials at Blair House on December 5. I reiterated as strongly as possible in both this and the previous conversation with President Hitch that we should spare no effort in saving the Bevatron and BEVALAC, that I appreciated his efforts, and that I look forward to our both pressing ahead on this with all possible vigor.

## Agenda and Script for Special Stockholders Meeting

Tuesday, November 21, 1972

2:00 P.M.

GTS

1. Chairman: I am Glenn Seaborg, Chairman of the Board of Directors of the corporation. Before the stockholders meeting begins, I want to welcome you and express the thanks of management for your attendance here today. Will the meeting please come to order. Mr. Quentin Koller, <sup>Assistant</sup> the Secretary, will now present proof of the due calling of the meeting.

QHK

2. Secretary: I present the following:

(a) Copy of the Notice of Special Meeting dated November 6, 1972, stating the time, the place, and purpose thereof. I suggest that, unless specifically requested, we dispense with the reading of the notice.

(b) A complete list, certified by me, of the holders of the common stock as of the close of business on November 6, 1972, the record date fixed by the Board of Directors for stockholders entitled to notice of, and to vote at, this meeting. This list, which will be kept open to the inspection of stockholders throughout the course of the meeting, shows that at the close of business on November 6, 1972, there were 88,400 shares of common stock of the corporation issued and outstanding.

(c) Declaration of Peggy Rogers, an employee of this corporation, showing that she caused to be mailed on or about November 7, 1972, to certain of the stockholders of record a copy of the Notice of the Special Meeting of the Stockholders.

(d) My declaration showing that on November 6,

1972, I delivered to the balance of the stockholders of record copies of the Notice of the Special Meeting of the Stockholders.

GTS

3. Chairman: The Secretary is directed to incorporate a copy of the Notice of Meeting together with the Declaration of Mailing and Declaration of Delivery of the notice in the minute book of the corporation as part of the minutes of this meeting. The minute book of the corporation is here and will be kept open to the inspection of stockholders throughout the course of the meeting.

GTS

4. Chairman: Will the <sup>Assistant</sup> Secretary please report on the persons present in person or by proxy at this meeting, as the proxies were tallied by him.

QMK

5. Secretary: There are present in person or by proxy at this meeting the holders of record at the close of business on November 6, 1972, an aggregate of  $\frac{84,370}{3536}$  shares of common stock of the corporation.

GTS

6. Chairman: By reason of the fact that the holders of record of a majority of the issued and outstanding common stock of the corporation entitled to vote at this meeting are present in person or by proxy, a quorum is present for all purposes.

GTS

7. Chairman: The meeting is declared lawfully and properly convened and now competent to proceed to the transaction of the business for which it has been called, as stated in the notice thereof.

GTS

8. Chairman: The minutes of the last meeting of shareholders held September 25, 1967, are open for inspection throughout the course of the meeting. I suggest that, unless specifically requested, we dispense with the reading of those or prior minutes.

GTS

9. Chairman: There being no such request, I pre- 320c  
sent to the meeting the Annual Report for the year ended  
July 31, 1972, which has been mailed or delivered to the stock-  
holders. In view of the fact that the stockholders have  
received a copy of the report, the chair will entertain a  
motion that the reading of the report be waived.

RSF

10. Stockholder: I so move.

EW

11. Stockholder: I second the motion.

GTS

12. Chairman: You have heard the motion. Are you  
ready for the question? All those in favor of the motion, say  
"Aye"; all those opposed, say "no." Since there is no opposi-  
tion, the Ayes have it, and the motion is adopted.

GTS

13. Chairman: This meeting has been called to  
elect directors to serve for one year until their successors  
are elected and qualified. The <sup>Assistant</sup> Secretary will present the  
nominations of management to the holders of common stock.

QHK

14. Secretary: I nominate Glenn T. Seaborg,  
Richard S. Frankel, Edward Woo, and Stanley T. Lesser.

RSF

15. Stockholder: I second the nomination.

GTS

16. Chairman: Are there any further nominations  
by holders of common stock? (Allowing time for nominations)

GTS

17. Chairman: No further nominations being heard,  
the nominations are declared closed.

GTS

18. Chairman: Are there any common stockholders  
who desire to vote and who have not done so? I hereby declare  
the polls closed.

GTS

19. Chairman: The report of the <sup>Assistant</sup> Secretary shows that  
the holders of 87,900 shares of common stock of the corpo-  
ration, being in excess of a majority of common stockholders,  
present in person or by proxy, have voted for the election of

Glenn T. Seaborg, Richard S. Frankel, Edward Woo and Stanley T. Lesser as directors. They are hereby declared elected to serve as directors of the corporation for one year and until their successors are elected and qualified.

GTS

20. Chairman: The next order of business is the submission of the 1972 Qualified Stock Option Plan for the employees for ratification and approval by the shareholders. This plan was adopted by the Board of Directors by written consent. The plan is enclosed with the Notice of Special Meeting of Stockholders. The <sup>Assistant</sup> Secretary will read the proposed resolution ratifying and approving this plan.

QHK

21. Secretary: The resolution is as follows:

RESOLVED, that the action of the Board of Directors of this Corporation in adopting an Employee Stock Option Plan, in the form enclosed with the Notice of Special Meeting of Stockholders, be and is hereby approved, and the adoption of this resolution shall constitute the ratification and approval of that Employee Stock Option Plan: and

BE IT FURTHER RESOLVED, that the Board of Directors of the Corporation, or a special committee of the Board acting on its behalf, be and is hereby authorized to administer the said Employee Stock Option Plan; to select from time to time the employees to be granted stock options pursuant to the said Plan; to determine the number of shares to be covered by particular stock options granted pursuant to the said Plan; and to authorize and direct the issuance of the shares of stock upon exercise of options granted pursuant to the said Plan, all without other or further ratification, waiver or approval by the stockholders of the Corporation; and

BE IT FURTHER RESOLVED, that the action of the Board of Directors and its stock option committee in granting the options set forth in the proxy statement and the granting of the options be and is hereby approved and ratified.

RSF  
EW  
GTS

22. Stockholder: I so move.

23. Stockholder: I second the motion.

24. Chairman: Is there any discussion? Are there any stockholders who desire to vote and who have not done so?



I hereby declare the polls closed.

*Assistant*

320e

GTS

25. Chairman: The report of the Secretary shows that the holders of 87,900 shares of common stock of the Corporation, being in excess of a majority of common stockholders, present in person or by proxy, have voted for the ratification and adoption of the 1972 Employees Qualified Stock Option Plan. There were no shares voting against ratification. I declare the plan ratified and approved.

GTS

26. Chairman: The next order of business is the selection of auditors of the corporation for the ensuing year. *Assistant*  
The Secretary will read a proposed resolution selecting auditors.

QHK

27. Secretary: The resolution is as follows:

RESOLVED, that this corporation select Lybrand, Ross Bros. & Montgomery as auditors of the corporation for the ensuing year.

RBF

28. Stockholder: I so move.

EW

29. Stockholder: I second the motion.

GTS

30. Chairman: Is there any discussion? Are there any stockholders who desire to vote and who have not done so? I hereby declare the polls closed.

*Assistant*

GTS

31. Chairman: The report of the Secretary shows that the holders of 87,900 shares of the common stock of the Corporation, being in excess of a majority of common stockholders, present in person or by proxy, have voted for the selection of Lybrand, Ross Bros. & Montgomery as auditors for the ensuing year. There were no shares voting against said selection. I declare the auditors selected.

GTS

32. Chairman: The next order of business is amendment of the By-laws of the corporation changing the date of the annual meeting to the fourth Tuesday of September, commencing with the year 1973. *Assistant*  
The Secretary will read a proposed resolution amending the By-laws.

5

QHK

33. Secretary: The resolution is as follows:

320f

RESOLVED, that Article II, section 2 of the By-laws of the Corporation be amended to read as follows:

"Annual meetings of stockholders commencing with the year 1973 shall be held on the fourth Tuesday of September, if not a legal holiday, and if a legal holiday, then on the next secular day following, at 2:00 o'clock p.m., or such other date and time as shall be designated from time to time by the board of directors and stated in the notice of meeting, at which they shall elect by plurality vote a board of directors, and transact such other business as may properly be brought before the meeting."

RSF \_\_\_\_\_

34. Stockholder: I so move.

EW \_\_\_\_\_

35. Stockholder: I second the motion.

GTS

36. Chairman: Is there any discussion? Are there any stockholders who desire to vote and who have not done so? I hereby declare the polls closed.

*Assistant*

GTS

37. Chairman: The report of the *Assistant* Secretary shows that the holders of \_\_\_\_\_ shares of common stock of the corporation, being in excess of a majority of common stockholders present in person or by proxy, have voted for the ratification and adoption of an amendment to Article II, section 2 of the By-laws of the Corporation. There were \_\_\_\_\_ shares voting against ratification. I declare the amendment adopted.

GTS

38. Chairman: The President would like to take this opportunity to discuss some of the highlights of the annual report (discussion by President).

RSF

GTS

39. Chairman: Is there any other business to come before the meeting?

RSF

40. Stockholder: I believe it is desirable to confirm the acts of the Board of Directors of this corporation as set forth in the minutes of this corporation since September 25,

1967, and I wish to present the following resolution:

RESOLVED, that the action of the Board of Directors as reported in the minutes and written consents held or consented to since September 25, 1967, are hereby fully approved, ratified and confirmed.

GTS

41. Chairman: Will someone second the adoption of the resolution.

EW

42. Stockholder: I second the motion.

GTS

43. Any discussion?

GTS

44. Chairman: All in favor say "Aye." All those opposed, say "no." There being no opposition, the Ayes have it and the motion is adopted.

GTS

45. Chairman: Are there any questions?

GTS

46. Chairman: Is there any other business to come before the meeting; otherwise, the Chair will entertain a motion to adjourn.

RST

47. Stockholder: I move the meeting be adjourned.

EW

48. Stockholder: I second the motion.

GTS

49. Chairman: The Chair has no objection. The meeting is adjourned.

MINUTES OF ORGANIZATIONAL BOARD OF  
DIRECTORS MEETING OF KEVEX CORPORATION HELD  
AT 898 MAHLER ROAD, BURLINGAME, CALIFORNIA  
ON NOVEMBER 21, 1972 at 2:45 PM

The following Directors were present:

Glenn T. Seaborg

Richard S. Frankel

Edward Woo

being a quorum of the Directors of the corporation.

Counsel for the corporation, Mortimer H. Herzstein, was present by invitation as was Quentin Koller, Controller and Assistant Secretary of the corporation. The Chairman of the Board of Directors, Mr. Seaborg, acted as Chairman and Mr. Koller, Assistant Secretary of the corporation, acted as Secretary of the meeting. The Chairman announced that the meeting was duly convened and that the meeting was ready to transact such business as may lawfully come before it.

On motion duly made, seconded and carried, the reading of the Minutes of the last meeting of the Board was dispensed with.

The following nominations for officers of the corporation to serve for one year or until their successors are elected and qualified were made:

President -- Richard S. Frankel

Senior Vice President and Treasurer -- Edward Woo

Assistant Vice President -- Gary Kramer

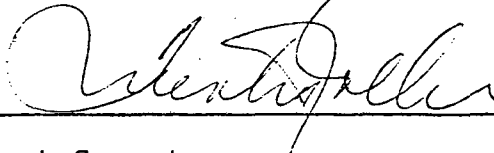
Vice President, Marketing -- Richard Cushing

Controller and Assistant Secretary -- Quentin Koller

Secretary -- Stanley Lesser

There being no further nominations, the foregoing persons were unanimously elected to the offices set forth opposite their respective names.

There being no further business on motion duly made, seconded and carried, the meeting was adjourned.



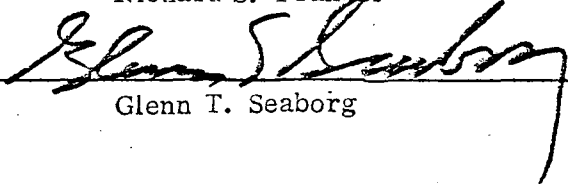

---

Assistant Secretary

We, the undersigned Directors, hereby consent to the holding of the foregoing meeting and have read and do hereby approve of the foregoing Minutes thereof.

---

Richard S. Frankel




---

Glenn T. Seaborg

---

Edward Woo

---

Suki and I took a hike to the water tank. Helen drove Mary Paige and Dianne to San Francisco to see the opera "Aida."

Wednesday, November 22, 1972 - Berkeley

Today is the ninth anniversary of John F. Kennedy's assassination.

I attended Professor Pimentel's Chem 1A lecture. Liljenzin and Kratz had a bombardment of uranium with argon at the SuperHILAC, but the intensity was too small to measure.

Don Harless called from Science Service in Washington at 10:45 a.m. He said that the real estate agent has reneged on the contract voted by the Science Service Board, which provided that Science Service would keep the \$5,000 promised him should a sale of the property not be completed. He now feels that we should keep the \$5,000 if something falls through other than his obtaining financing. Don indicated that Milton Harris checked this out with real estate people, who suggested we try the man for sixty days, particularly since no others have come along. An attorney suggested that this is not abnormal in Washington real estate. Ted was apparently reluctant, but Harris advised our accepting these new terms and I said I would sign the new contract (copy attached).

A Mr. Valerio of Radio Liberty in New York called me at 10:50 a.m. to conduct a tape-recorded telephone interview as a follow-up to Andronik Petrosyants's announcement at the AIF-ANS meetings last week that the Soviet Union plans to put into operation a fast breeder reactor. In response to his questions, I described what a fast breeder reactor is and how the United States and the USSR are taking two different routes toward achieving the same goals.

Joyce Burr called me just before 11:00 a.m. to tell me that, on the day after the election, Assemblyman John Knox amended his AB-889 bill so as to remove its environmental quality provisions almost completely. Joyce suggested that the criticism from real estate interests had got to him. The hope is that the bill can be kept out of the Conference Committee, and she is urging people to call Speaker of House Bob Moretti as well as Assemblyman Knox to request this. She believes that Knox needs proportionate pressure now from environmentalists. We discussed the forthcoming CUWA meeting.

Dick Wolfe came in at 11:30 a.m. to review the content of President Hitch's letter to Edward Carter regarding the BEVALAC and John Perkins's remarks upon greeting the Chinese scientific delegation at University Hall on December 13.

I had lunch in my office with Earl Hyde in order to discuss affairs of the Nuclear Chemistry Division and then walked down to the campus and taught my Chem 1A section in Room F.

After this, I met with Professor Robert Connick in his office to discuss the questions which an Academic Senate Committee has asked concerning the value of LBL to the Berkeley campus. The Committee consists of Connick, Chamberlain and Herbert Blumer (Chairman).

**SCIENCE SERVICE**

1719 N Street, N.W., Washington, D.C. 20036

## TELEPHONE BALLOT OF THE EXECUTIVE COMMITTEE OF SCIENCE SERVICE

November 21, 1972

RE: SCIENCE SERVICE BUILDINGS SALES AGREEMENT

Buyer declined to accept Sales Agreement as approved by Board of Trustees November 14, 1972, and requested that the \$5,000 deposit be returned if the financing cannot be obtained within 60 days.

By telephone ballot to the Members of the Executive Committee, completed November 22, it was RESOLVED, that the \$5,000 deposit be returned to the International School of Law if financing is not obtained within 60 days of signing of the Sales Agreement.

The Nuclear Chemistry Division Program Committee met in my office from 3:00-5:00 p.m. to discuss methods of cutting the budget to meet our target. Present were Joseph Cerny, Richard Diamond, Albert Ghiorso, Bernard Harvey, Earl Hyde, Isadore Perlman, Arthur Poskanzer, David Shirley, Kenneth Street, David Templeton, and Stanley Thompson. We will cut a number of people from support services and computer programming, in addition to a number within the division. This includes: (1) two of Garrison's people, Michael Jayko and Harvey Sokol, will be terminated upon six months notice; (2) Herman Robinson will be terminated as of July 1, 1973, so far as the Nuclear Chemistry (4600 series) budget is concerned, but we will make every effort to transfer him to Ken Mirk's geothermal energy project (if this materializes) or to the BEVALAC (if this materializes); I will also try to convince the AEC to make a special arrangement for an especially generous retirement; (3) we will place on half time Elinor Potter, Roberta Garrett, and Lillian Hill as of January 1, 1973 and notify them that they will each be terminated on their 55th birthday in order to give them the retirement benefits that accrue therefore. If it should be possible to effect earlier retirements, this will be done after discussion with them.

I put in a call to Robert Moretti's office in Sacramento as a follow-up to Joyce Burr's call, but mine was not returned. I wrote a supporting letter to the Membership Committee of the Bohemian Club, strongly recommending that Sol Linowitz be admitted (copy attached).

Thursday, November 23, 1972 - Lafayette

Today is Thanksgiving Day. I worked in the yard and empty lot, cutting and pulling weeds, in the morning. Steve and Dave came to the house in the morning.

We all watched the San Francisco 49ers-Dallas Cowboys football game on TV after lunch. San Francisco won, 31-10, which puts the Washington Redskins in a commanding lead in the NFC-Eastern Division.

Eric, Alan Schiffer and I went for a hike in Briones Regional Park; starting at the end of the Park entrance road, we hiked up the hill and on to the region of the ponds, then back to our starting place via the old Briones Valley Road.

We had our Thanksgiving dinner, which Helen prepared, at about 6:00 p.m. The evening was spent in various ways, playing records, Eric with Alan visiting friends, etc. Alan spent the night with us.

Friday, November 24, 1972 - Lafayette

Helen and I went to Lafayette Rental and Hardware and bought an Ace rotary-type lawn mower. I spent the day mowing the grass in our back yard and field. Steve visited with his friend Joan Duffield in her parents' home in San Francisco. Eric, Hodgie Alexander, Alan, Janet Rosati, Ann Fagin, and Marilyn Dexter (the latter three Eric's friends at Davis) spent the day in San Francisco. They all (except Hodgie) had dinner at home with us. Eric then drove Janet (Reliez Road, Lafayette), Ann (Vallejo) and Marilyn (Sunnyvale) home.



November 22, 1972

Membership Committee  
The Bohemian Club  
624 Taylor Street  
San Francisco, California 94102

Gentlemen:

I am writing to strongly support the nomination of Sol M. Linowitz for Non-Resident membership in The Bohemian Club. He combines to an extraordinary degree the qualifications which the Club seeks in its membership.

We first became personally acquainted about five years ago when he was serving as U.S. Ambassador to the Organization of American States and I served as Chairman of the U.S. Atomic Energy Commission. Our contact has continued since that time on both a professional and social basis.

I have been very much impressed by his broad range of knowledge of national and international affairs and his experience in industry and public affairs, which will have been outlined in his application form. He has established himself as a statesman in every arena of his activity and, accordingly, has a vast circle of friends and acquaintances. He has an infectious, engaging personality, and is both warm and articulate in communication.

I am quite certain that he would be a regular participant in the Summer Encampment, and it is here that I believe the Club would most value his membership: he is an accomplished musician and artist, and has proven histrionic talents. A violinist, he was called a child prodigy and has continued to further his musical skills. In the past he has been an actor, leader of a college dance band, poet and playwright. For over seven years, he moderated the popular Rochester (New York) radio--later

Membership Committee

- 2 -

November 22, 1972

television--program, "Court of Public Opinion." He is unusually versatile for a man who has become famous for his other accomplishments (e.g., his role in the buildup of the Xerox Corporation).

I urge the election of Sol Linowitz to Non-Resident Membership in the Bohemian Club.

Sincerely yours,

Glenn T. Seaborg

GTS/ssk

Saturday, November 25, 1972 - Lafayette

I watched the University of Michigan-Ohio State University football game on TV. Ohio State won 14-11 and thus will go to the Rose Bowl to play USC.

In the early afternoon, Sheila came by the house in order that we might make plans for the forthcoming visit to the Bay Area of the delegation of scientists from the People's Republic of China, for which I shall act as host.

Helen, Dianne and I took turns mowing the field, I despite some blisters on my feet as an aftermath of my mowing stint yesterday.

Eric went to Point Reyes with his friend Tom Mochizuki and returned in time for dinner with us. Dave spent the day at home with us, working on school work, scholarship applications, etc., as he had yesterday.

Steve received notification of his 1-H draft classification today - good news! He took the station wagon, as Eric had yesterday, to visit Joan Duffield, drive to Davis to deliver a desk to his house, etc. He spent the night with Ron Mandella in Berkeley. His unwanted tenants have finally moved out of his house in Davis.

Sunday, November 26, 1972 - Lafayette

I watched on TV the Washington Redskins-Green Bay Packers football game. Washington won, 21-16, and thus clinched a play-off berth. I removed weeds from the junipers around the tennis court while Eric finished mowing our field.

Dick Wolfe called to further review President Hitch's letter to Regent Edward Carter re the BEVALAC.

Steve brought Joan Duffield home with him in the afternoon and they finished making his quilt. Joan, with Ron who arrived at 7:00 p.m., had dinner with us. Helen drove Steve and Eric back to Davis, and Dave got a ride in to Berkeley with Ron and Joan.

Bruce Howe came by with some books and bookcase construction materials for us to store for his sister Lucinda until she starts school at Davis next quarter.

Monday, November 27, 1972 - Berkeley

I spent the morning until 11:00 a.m. calling people in preparation for the forthcoming visit of the Chinese scientists. Among those I talked with were Mark Christensen, Harold Fidler, Shiing Chern, Melvin Calvin, and Emil Smith (UCLA).

I held my office hours in Latimer Hall from 11:00 a.m. to noon. I called Bill Bevan at AAAS and told him that I had received the stack of letters to the dozen corporation presidents of whom we are soliciting funds for the 1973 meeting and asked if I was supposed to call them individually, which proved to be the case. I told him that I

would begin making the calls tomorrow on the basis of the copies of letters I had received. He will let me know later about our approach to Charles (Brel) McCoy.

I went to the Faculty Club to join the Chemistry Department faculty in the Howard Room for lunch. I talked to Shirley and Templeton about the Department of Chemistry's presentation to the Chinese visitors. I then taught my Chem 1A lab in Room C.

I learned via an AEC press released (P-389) today that Westinghouse Electric Corporation has been selected as the lead reactor manufacturer for the first demonstration breeder nuclear power electric plant!

I continued to make a large number of phone calls to local Berkeley colleagues in connection with the imminent visit of the Chinese scientific delegation. Those I talked with in the afternoon included Charles Townes and Clint Ballou.

I mailed to Catherine Borrás a suggested resolution of appreciation which the AAAS Board of Directors will give to David Blackwell upon his leaving the Board in December.

From 3:30-4:00 p.m., I conferred with Hyde about Nuclear Chemistry Division problems. I checked in with Liljenzin and Kratz in Room 203 a couple of times.

Suki and I took a hike to the water tank. While eating dinner in the playroom, I watched the first half of Monday night football on TV, the Miami Dolphins vs. the St. Louis Cardinals; Miami won, 31-10.

At 8:30 p.m., I heard fire engines coming up Glen Road. I walked up Monticello Road and found that they were fighting a fire at the Edward Riksheim residence, in the kitchen area, which they succeeded in getting under control.

Tuesday, November 28, 1972 - Berkeley - San Francisco

Anne Keatley called from Washington to bring me up-to-date on arrangements for the visit of the Chinese scientific delegation.

At 9:00 a.m., I attended the meeting of the SuperHILAC planning group. Ghiorso, the Alonsos, Nitschke, and Nurmia were present. The Adam ion source has developed a leak which is difficult to find. We decided that the argon beam missed the uranium target in our bombardment last Wednesday.

I called Dick Wolfe to make further suggestions for Hitch's letter to Edward Carter regarding support for the BEVALAC.

At 10:00 a.m., Olof Saline (Department State Security Officer from San Francisco), Kenneth Hurd (AEC SAN Office Security Officer), and Dan Andes (LBL Security Officer) came to the office to discuss arrangements for the visit of the Chinese scientists delegation on December 13. We met in the Conference Room of Building 70A, after which Sheila walked them through the Lab tour, including the Bevatron

Tuesday, November 28, 1972 (con't)

and the SuperHILAC and the luncheon at the cafeteria. They worked out the bus and walking routes and complete timetable.

I had lunch in the lower level of the cafeteria with Diamond, Kienle, Stephens, Liljenzin, Kratz, and others. Sheila came through with the security people while we were eating.

From 1:00-2:00 p.m., I attended the Associate Directors meeting in McMillan's office. Present were Born, Calvin, Fidler, Hollander, Hyde, Kelly, McMillan, Wenzel, West, and Zackay. McMillan informed us that he had heard from Ann Miller and Marjorie Sproul, who had told him that the ARCS have \$2,000 available for one or more scholarships for science undergraduates (or possibly graduate students) working at LBL. We all agreed that this should be accepted, probably for two students, and that the Associate Directors would make recommendations and Harold Fidler would coordinate the choice of the recipients.

McMillan said that the Townes Committee will meet on the hill all day Monday, December 4, followed by a dinner at the Narsai Restaurant in El Cerrito. On Monday morning they will meet with Thornton and Whinnery, Chancellor Bowker's liaison committee between LBL and the campus, and with the Academic Senate committee which is considering relationships between the campus and LBL. They will be concerned with the educational function of LBL relationships with our academic colleagues on the campus. In the afternoon, the Committee will interview Associate Directors individually. They will also meet the morning of December 5. Thimann and Arnold will not be present and Burton Moyer has replaced William Fowler as a member and will be present.

McMillan called me just before 3:00 p.m., very agitated because he had learned from Bob Latimer that Ghiorso has a 9-mg californium-252 source in SASSY in violation of some San Francisco Operations Office rules. I checked this out with Ghiorso and called McMillan back, suggesting that he discuss it directly with Ghiorso. On this basis, it was decided to continue with the experiments since the source was inside the apparatus, well protected, and presented minimal if any hazard.

Darleane Hoffman called me at 3:30 p.m. from Los Alamos to say that the chemists there are ready to handle any targets bombarded in the SuperHILAC to analyze them for fission products. They have time available--especially between now and January. I told her that it is unlikely that any target would be bombarded for this purpose before early next year.

I spent the greater part of the day on the phone calling the individual faculty who will participate in the programs on chemistry and biological sciences and on physics and engineering. Eugene Commins, Chairman of the Physics Department, will preside over the physics section, and I will preside over the one in chemistry. I talked with approximately 35 faculty to arrange these meetings, discussing what they might talk about and our general format. Everyone who could was extremely pleased to accept. I asked Kinsey

Anderson, Director of the Space Sciences Laboratory, if they could be on standby for a possible visit after we have taken the delegation to the Lawrence Hall of Science, which he said he would do. In all of these conversations, I also asked each participant to provide us with a 50-100 word biography which we will prepare for the Chinese.

Helen picked me up from work and we drove directly to Fort Mason in San Francisco where we attended a reception and dinner at the Officers' Club hosted by Mr. and Mrs. Robert Thorne (Manager, San Francisco Operations Office). We met a number of our old friends from the AEC and some of the new people. Among those we hadn't met before were Paul Bender, new Secretary of the Commission, Martin R. Hoffman, General Counsel, and Major General Frank A. Camm, new Assistant General Manager for Military Application.

The Area Managers are in town for their regular meeting with the General Manager and his staff. Thus, Bob and Maggie Hollingsworth were present. Among the area managers that we spoke to were Mr. and Mrs. Harold C. Donnelly, Albuquerque Operations Office; Robert J. Hart, the new Area Manager at the Oak Ridge Operations Office; Wesley M. Johnson, New York Operations Office; Kenneth A. Dunbar, Chicago Operations; Elton A. Youngberg, Grand Junction Office; William L. Ginkel, Idaho Operations; Lawton D. Geiger, Pittsburgh Naval Reactors Office; Thomas A. Nemzek, Richland Operations Office; and Nathaniel Stetson, Savannah River Operations Office. We also talked to John D. Anderson, John Vinciguerra, John Flaherty, Martin Biles, Frank Pittman, Edward Giller, Frank Baranowski, Bob Hirsch, John C. Ryan, Joseph L. Smith, James L. Liverman (new Director of the Division of Biomedical and Environmental Research), James E. Conner (new Director of the Division of Planning and Analysis), Mr. and Mrs. Don Reardon, and others.

Helen and I sat at the head table with the Thornes, Hollingsworths, Bender, Vinciguerra, Ryan, and Hoffman. After the dinner, toasts were offered by Thorne, Hollingsworth, Camm, and me. I spoke of the delight of Helen and I to be together with old friends and reviewed briefly my present schedule in contrast to that during my stay in Washington.

Wednesday, November 29, 1972 - Berkeley

Helen drove me to work in the station wagon since she needed it today to drive Dianne and some of her classmates to Diablo Valley College to visit the planetarium and museum. I went to Pimentel's Chem 1A lecture at 9:10 a.m.

I called George Milly in Rockville, Maryland at 11:20 a.m. and accepted his offer to become a member of the Board of Directors of GEOMET, Inc., as outlined in his letter of June 12, 1972. I will visit with them sometime in the period December 27-30 while I am in Washington to receive the briefing he suggested. We will let him know the date later. In the meantime, he can start with any arrangements he wishes.

I had lunch in my office, then walked down to the campus to teach my Chem 1A lab section in Room F.

Wednesday, November 29, 1972 (con't)

I received a call at 3:30 p.m. from Howard F. Didsbury, Jr., Executive Director, Future Studies Program, Newark State College. He called as a follow-up to his letter of November 9, inviting me to serve on the Advisory Council of the Program for the Study of the Future. He said that there would be no meetings but that he would want my feedback on the various reports he will send out. Accordingly, I said that I would serve. I indicated that I had inquired about him to several sources and had received good reports, which seemed to please him very much.

I sent a congratulatory letter to Caspar Weinberger upon his appointment as Secretary of Health, Education and Welfare, which was announced by the press yesterday. I also wrote to Stephen Benson, President of the Olle i Skratthult Project, to order another recording from them (copy attached).

I received a call from Ken Ericson in San Francisco, asking about my visit with Boris Myasoyedov. I indicated that I was unable to spend much time with him. He also asked if I would be willing to have one of their people from Washington meet with me in connection with the visit of the Chinese scientists. I said that I would have Sheila contact him when my schedule is better known and that we would send him lists of the faculty who will be meeting with the delegation.

I talked with the secretary to the president of the Robert Mondavi Winery to arrange a tour there for the Chinese scientific delegation on Sunday, December 10, which she said they will be glad to handle. Their public relations director, Margaret Biever, will be in charge of the arrangements.

At 3:30 p.m., Robert Hollingsworth, Spofford English, Dan Miller, and Bob Thorne came by my office. Hollingsworth had just concluded the second day of his two-day meeting with the AEC Area Operations Managers at the AEC SAN Office. Earl Hyde joined us and we pointed out to Bob a problem in getting permission for Swiatecki to visit the Dubna Lab because a formal request had not been submitted to AEC in a timely fashion. Hollingsworth immediately directed Miller to work with Hyde to phone John Erlewine (Deputy General Manager) in Washington to make the necessary arrangements.

We walked up to the HILAC Building where we joined Ghiorso in the Conference Room. Here we showed Hollingsworth the model of the SuperHILAC, and I explained in some detail the reason for the current worldwide excitement about the burgeoning field of heavy ion research and suggested that this has a future of importance comparable to that of high energy physics. I explained the past role of the HILAC, the prospective role for the SuperHILAC, how this would be connected to the Bevatron to form the BEVALAC, and the subsequent role of the booster to be inserted between the SuperHILAC and Bevatron, expounding the energies reached in each of these machines and combinations of machines. I also described the research potential in the field of superheavy elements, heavy ion physics, and therapeutic medicine.

November 29, 1972

Mr. J. Stephen Benson, President  
Olle i Skratthult Project, Inc.  
P. O. Box 14171  
University Station  
Minneapolis, Minnesota 55414

Dear Mr. Benson:

I was very pleased to receive your letter of November 15, 1972, with its enclosures.

I have very fond memories of the NIKOLINA record which I heard played many times when I was a little boy in Ishpeming, Michigan. I saw the Olle i Skratthult group when they came to Ishpeming, and I remember how they took the Swedish community there by storm.

I would like to order a copy of the Anne-Charlotte Harvey recording and am enclosing my check herewith.

With best regards,

Cordially,

Glenn T. Seaborg

GTS/ssk  
Enclosure



Hollingsworth indicated that there is a large possibility that the Bevatron will be shut down due to the severe budget stringencies which impinge especially on the research budget. However, he exhibited a good understanding of the importance of heavy ion research and specifically referred to the high rating that this had been given in the Bromley report. He himself raised the possibility of limiting the operation of the Bevatron to its role as part of the BEVALAC, thus closing down the Bevatron for high energy physics, but saving money due to the lower cost of operating the BEVALAC. He indicated that he will look into this possibility very carefully with Schlesinger and others.

Later Hollingsworth told me confidentially that, in his appointment with President Hitch tomorrow, he is going to speak frankly to him about the future of the Bevatron and the possibility of somehow trying to find funds to operate the BEVALAC on a limited budget. We agreed that it would be necessary to make some innovative changes in budgeting, such as the creation of a new category for heavy ion research.

President Charles Hitch called me at 5:35 p.m. to convey the news that, unfortunately, Regent Edward Carter's trip to Washington has been cancelled. Thus, the letter we have been working on will not be needed. Hitch also raised the question of the changed atmosphere now that Roy Ash will replace Cap Weinberger as Director of the Office of Management and Budget. We agreed that he should try to see whether there are those among the Regents who are well acquainted with Ash so that we might pursue this problem of the future of the Bevatron and the funding for the BEVALAC with their help with Ash. We also spoke of the appointment he has scheduled with Hollingsworth tomorrow, and I indicated that he will probably present a pessimistic picture with respect to the future of the Bevatron for high energy physics, but may perhaps suggest the possibility of operating it solely as part of the BEVALAC and thus at a reduced funding level.

Helen drove me home. I took a hike with Suki to the water tank.

Thursday, November 30, 1972 - Berkeley

Charles Wilke met with me in my office from 10:00-10:30 a.m. He told me about the need for support of his work on the conversion of cellulose, with the help of the enzyme cellulase, to glucose, which in turn can be converted to numerous products, such as ethyl alcohol, acetic acid, etc. This work has taken a turn for the better and seems immediately practicable. He is also concerned about the drop of his budget from \$40,000 to zero on July 1, 1972. I told him that we are in no position to help, that he should work with Jack Hollander to write proposals for support to AEC and NSF. I said that we will review the situation later in the spring to see if we can possibly give him any support above zero for the period after July 1, 1972.

At 11:00 a.m., Helen and Maggie Hollingsworth dropped by and I took them up to the HILAC Building where we joined Ghiorso and, after showing them the model, gave them a tour of the SuperHILAC. We then came down and met Robert Hollingsworth, Robert Thorne, and John Ryan at my office. The six of us went up to the cafeteria where we had

Thursday, November 30, 1972 (con't)

lunch together at the outside table overlooking the campus. It was a beautiful day and our visitors were impressed.

Bob told me about his meeting with President Hitch this morning, which lasted about 35 minutes and which included Bob Thorne and John Ryan as well as Vice President John Perkins and Richard Wolfe. He said that he made it clear to Hitch and Perkins that he expected a change in the leadership at LBL in the rather immediate future. He said that he indicated budget stringencies would quite likely make it necessary to terminate the operation of the Bevatron for high energy physics and suggested that Hitch should assume leadership toward converting the Lab towards heavy ion research, which of course would involve the BEVALAC. Bob indicated that Hitch and Perkins offered no objections to this and indicated that they would move in this direction. Thorne told me that the new Director for LBL will be chosen by the Special Projects Committee of the Regents and that no faculty committee will be involved. They have a list of names already, including some input from the Townes Committee--the list from the latter includes predominantly high energy physicists. However, Hollingsworth and Hitch understand that the Director probably would have to be from another area if the Lab is to go in the new direction suggested. Hollingsworth emphasized to Hitch that the changes shouldn't be small incremental ones, but rather substantial steps.

After lunch we said goodbye, and Thorne drove the Hollingsworths to the San Francisco Airport where they were scheduled to catch a plane to Los Angeles.

Frances Quinn called me from AAAS to discuss our procedures for soliciting funds from corporate executives for the Mexico meeting. She suggested that in my phone calls to them I try to determine a yes or no to a request so that we can get by with as little follow-up as possible. She also suggested that I ask for an indication, if they will support us, of how much they can afford to put into this. I will be able to tell them updated material on the meeting will be available in about two weeks.

Helen came in at 1:00 p.m. and signed her new will, prepared by Smith and Granberg, with Sheila Saxby, Eileen Eiland, and Kathy McCracken as witnesses.

I continued my phone calls in connection with the visit of the Chinese scientists. I talked with Myrtle Hsiang, a postdoctorate in the Biochemistry Department, who will serve as translator at the chemistry meeting. Leo Brewer called to tell me that he has a postdoctorate in the Chemistry Department, Shih-ger Chang, who can translate the presentations by Bradley Moore and Neil Bartlett.

From 3:30-6:00 p.m., I attended a meeting of the Chemistry Department tenure faculty in 406 Latimer Hall to discuss the promotions of Luciano G. Moretto and Ronald R. Herm to the tenure position of Associate Professor. Kenneth Pitzer, as Chairman of the Evaluation Committee, and Joe Cerny, as a member, presented the recommendation of the committee for the promotion of Moretto, and I spoke on his

behalf. Orlemann, representing also the views of Charles W. Cook who wasn't present, questioned Moretto's dedication and interest in teaching Chemistry 5 this last quarter, although he had done well the previous quarter. After some discussion on this point, which was the only negative information available, a vote was taken and those present voted unanimously for his promotion with an abstention by James Cason.

We then went on to discuss the promotion of Herm, against whom the evaluating committee had voted weakly. After much discussion about his originality and potential to be a leader in the field of molecular beam research, the group voted about 2-to-1 for his promotion. I voted against it on the basis of the evidence that was presented at the meeting that he is not really a potentially outstanding man in his field.

Suki and I took a hike to the water tank. The roofers started to put a new roof, i.e., additional layers of asbestos, felt-covered with white rock, on our house today.

Friday, December 1, 1972 - Berkeley

The roofers continued putting a new roof on our house; they are supposed to do the entire area except the higher level over our living room, but they only did about 2/3 of this, which may lead to a dispute.

I began making my phone calls to the various corporate executives from whom we are soliciting money to support the AAAS Mexico City meeting. Those I am contacting are Donald C. Cook, American Electric Power Company; Edgar Kaiser, Oakland; Robert Anderson, Atlantic Richfield Company; Willard F. Rockwell, Jr., North American Rockwell Corporation; Lynn A. Townsend, Chrysler Corporation; Norton Simon, Los Angeles; E. H. Gott, United States Steel Corporation; O. N. Miller, Standard Oil of California; and Gabriel Hauge, Manufacturers Hanover Trust.

I also continued phoning in connection with the faculty programs at Berkeley for the Chinese scientists. Eugene Commins in physics is prepared to chair that program. I called numerous people to ask them to be in the greeting party to meet the delegation, including Angus Taylor and Starker Leopold (who indicated that he is no longer President of the California Academy of Sciences and referred me to Ian Campbell). I confirmed with Emil Smith at UCLA that he would serve as master of ceremonies in the greeting party when the delegation arrives Saturday night (the 9th).

At 11:00 a.m., Earl and I met with a large group of long-term employees of the Nuclear Chemistry Division and some others closely coupled to our operations in the Building 70A Conference Room, which was completely full. I explained to the group that the Nuclear Chemistry Division is in a financial crisis unprecedented in its 26-year history and then went on to describe the situation in some detail, based on the attached outline notes and talking paper. Following my presentation, Earl made some amplifying remarks and then we spent the remainder of the hour answering questions and receiving

## Notes for Friday Discussion

- 1) Comment on invitation list
  - N. Chem. long term employees
  - Others closely coupled to our operations like
    - Fred Goulding                      George Kilian
    - Mitch Nakamura                      Bob Latimer
- 2) Review budget crisis as covered in typed memo.
- 3) Additional points on budget
  - Bevalac funds not here yet -
  - FY 74 prospects not bright - level budget is best hope - reduced funds likely.
- 4) Recent steps - taken by leadership of Division  
GTS, EKH, 13-man program committee
  - a) reduction electronic support by 5 - stricter control
  - b) reduction mechanical support by 9.5 - stricter control by M. Michel and Dick Escobales
  - c) reduction of direct support from Safety Services by several below level of July
  - d) reduction in computer programming by 3
  - e) reduction of our scientific staff
    - 1) insofar as possible by normal departures but some involuntary reductions in work schedules or involuntary terminations are involved.
    - 2) all contemplated actions have been discussed with people involved before this meeting.
    - 3) 88-inch crew and staff - 10-15 people affected, as notified by B. G. Harvey, Don Clark, and Don Morris.
    - 4) actions at Bldg. 71 on machine accounts are not complete
    - 5) in Bldg. 70/70A area the following people are affected
      - Jay Weidenfeld                      Herman Robinson
      - Elinor Potter                      Roberta Garrett
      - Michael Jayko                      Winifred Corniea
      - Lillian Hill
- 5) There may be others but we have no further action with respect to people on 4600 accounts in mind at this moment

-2-

We are examining ways to save \$5000 here, \$1000 there.

- a) new storeroom controls - memo already issued
  - b) travel restriction
  - c) purchase restriction
  - d) conversion of equipment money to people support within legal restrictions
  - e) Christmas shutdown
- 6) Appeal for cost cutting suggestions directly to us, to your group leader, - anonymous if you wish.
- Perhaps someone has personal reason to take a leave without pay or long vacation this spring and has not expressed this. We can be flexible.
- 7) Possibility of shutdown in June
- possible request for use of vacation credits before July 1  
why this helps - separate funds.
- 8) Open discussion.

~~In Confidence~~  
~~Low Security~~

TO ALL MEMBERS OF THE NUCLEAR CHEMISTRY DIVISION

The Nuclear Chemistry Division of LBL is in a financial crisis unprecedented in its 26-year history. This crisis has been building up over the past 4 years of nearly static budgets as inflationary factors have steadily reduced the size of the research program which could be supported. Our dollars come from the Chemistry Programs Branch of the Division of Physical Research of the AEC. The chemistry managers have been unable to allocate funds to counteract inflation because the total dollars set aside for chemistry programs nationwide have been reduced by several millions during the past 2 years. At the beginning of the current (1973) fiscal year our nuclear chemistry budget was reduced by 5.6% from the preceding year. We had taken a number of steps to reduce the expenses of our programs and we were optimistic that we could get through this year without any drastic reduction in staff. However, we have been working within some severe restraints that effectively magnified the effect of the 5.6% decrease in dollars. The total chemistry budget in Berkeley has suffered less than that

200 people  
O.S.H.

of other national laboratories because of our strong position in heavy ion physics and in transuranium elements. In particular, the conversion of the Hilac into the Superhilac and the need for an increased effort in heavy ion physics and in the search for the superheavy elements have won the favor of the nuclear chemistry community, nationwide, and of the AEC. As a result LBL was provided with 2.8 million dollars for the reconstruction of the Hilac and the research budget was cut less than it otherwise would have been. But this support was coupled with an order that we transfer an additional \$180,000 block of our general research funds to the direct support of the Superhilac machine account. This transfer on top of the original cut called for very careful management of the reduced funds for the research programs. We have devoted a major fraction of our time to this task in the early months of this fiscal year, but unfortunately the expense records of the first 4 months clearly indicated that we were spending at a rate faster than we could afford and that some further reduction in staff was imperative. At this point we were hit with another blow which put our situation in the crisis category. This was the receipt by the laboratory of a revised

financial plan for this fiscal year — a plan which is the result of negotiations between the president's Office of Management and Budget ( OMB ) and the AEC. This plan includes a directive to us to spend \$110,000 less than the amount appropriated by Congress. Our funds are administered in 3 categories: the Superhilac machine account, the 88-inch Cyclotron account, and the research account (which includes research done at both accelerators as well as work unrelated to the accelerators.). After receipt of the revised financial plan, the FY1972 and FY1973 budgets compare as follows: ( figures in thousands )

	FY72	FY73	Change
Superhilac	1,525	1,460	-4.3%
88-inch Cycl.	960	930	-3.2%
Research	6,450	5,950	-7.8%
	-----	-----	-----
Total	8,935	8,340	-6.7%

The 7.8% reduction in the research account coupled to a 4% inflation puts us in a corner which forces us to carry out an immediate reduction in staff. This reduction will affect several people who have been in our Division for many years and will greatly weaken our effort in some research fields we have supported in the past. We can make some savings in supplies, outside purchases, travel



etc. and we are taking immediate steps in these areas in order to save money for salaries. But more than 80% of our funds are spent on salaries within LBL so there inescapably remains the necessity for reduced work schedules for many employees and termination of employment for others.

The Superhilac is in special difficulties of its own. The staff of the machine have done a remarkable job of reconstruction of the accelerator within the tight limit of 2.8 million dollars, which is now exhausted. The historical course would be for the AEC to provide a special fund for debugging and startup. Until November the AEC had not done this and the staff of the Superhilac tried to carry out the debugging and startup within the confines of the normal machine budget. This has not been possible and the budget was considerably exceeded during the first four months of the year. Fortunately, we have recently learned that the AEC will provide an additional \$ 300,000 for the Superhilac. Even so, there will have to be some reduction in staff at the machine over the current level and reductions in other expenditures if the Superhilac is going to avoid a deficit on July 1.

Insofar as is possible within the directives from Washington with respect to the management of the Superhilac

funds we are transferring engineering and scientific staff to the Superhilac machine or research accounts. This will reduce somewhat the adverse effects on the majority of our staff whose support comes from the research accounts.

~~We have tried to contact and give advance warning to those who will be faced with reduced work schedules or with termination of employment. We ask the rest of you to cooperate in every way possible to reduce expenditures between now and July. Some particular ways you can help are in reduced travel, fewer withdrawals from stockrooms, lower computer usage, fewer purchases, and a reduced level of research projects. Some of you may have suggestions for savings which we have overlooked and may wish to pass these on to us directly or through your group leader or through some member of the Division's Program Committee. If you wish your suggestion may be anonymous.~~

suggestions from those present. The meeting seemed to go quite well and, despite the gloomy nature of the subject and the fact that a number of people in the room were being terminated or put on part-time, there seemed to be general appreciation for our candid explanation of the situation.

I had lunch in the cafeteria with David Shirley to discuss with him the forthcoming meeting of the Townes Committee and other matters involving the Nuclear Chemistry Division and its relationship with the campus.

At 1:00 p.m., I walked down to the campus with Iz Perlman and attended the weekly meeting of the teaching staff of Chemistry 1A laboratory sections.

I signed and returned to Donald Harless the sales contract for the sale of the Science Service property to Charles C. Mottley (copy attached). I wrote Sol Linowitz, accepting his invitation to join the Board of Directors of DATRAN, Data Transmission Company (copy of correspondence attached).

At 5:00 p.m., I met the members of the University of California, Berkeley, Alumni Council (total number about 80, including wives) and accompanied them on a tour of the Bevatron. At 6:15 p.m., we all went to the cafeteria where Helen, the McMillans, and the Tellers joined the group. Here, during the reception and dinner, we met many of our friends--the Dick Ericksons, the Mike Kolls, the George Links (President of the Alumni Association), Bruce Quann (President of the ASUC), the Donald Bentleys (whose daughter Elizabeth is in my Chemistry 1A lab section in Room C), the Dick Jenningses, and many others. Helen and I sat at a table with Buzz Barber (of Vice Chancellor Robert Kerley's office) and Marily Howekamp (she works at Alumni House and sends her best greetings to Lynne).

After dinner, George Link, as Master of Ceremonies, introduced McMillan, Teller and me for remarks. I described the family vote taken when I was offered the AEC Chairmanship, reminisced about my days as Chancellor of Berkeley, described my present schedule, and described the research program of LBL including the Bevatron, HILAC, SuperHILAC, search for superheavy elements, the proposed BEVALAC and its needs for funding, and the program of energy and environmental research. Our talks were followed by a general discussion and question-and-answer period.

We got a 2-hour (20 nanoampere) bombardment of uranium with argon ions at the SuperHILAC today, which Liljenzin and Kratz put through their chemical procedure to test the various steps.

Saturday, December 2, 1972 - Alameda County

I drove to the South Student Parking Lot of California State University at Hayward, where I met about thirty members of the Citizens Task Force of the EBRPD, as well as Al Baum, Lew Crutcher, Bill Horne, Jerry Kent, Grant Reid, Howard Cogswell (who served as our guide), and others of the EBRPD. We grouped into about six cars and had a tour of the nearby Garin Regional Park; we also viewed the

## SALES CONTRACT

THIS AGREEMENT of Sale is made in triplicate this 27<sup>th</sup> day of October, 1972 between CHARLES C. MOTTLEY OR ASSIGNEE (hereinafter known as the Purchaser) and SCIENCE SERVICE (hereinafter known as the Seller).

WITNESSETH: That for and in consideration of the sum of Five Thousand 00/100 Dollars (\$5,000.00), by cash/check in hand paid, receipt of which is hereby acknowledged, the Purchaser agrees to buy and the Seller agrees to sell for the sum of Five Hundred Thousand 00/100 Dollars (\$500,000.00), all that certain piece, parcel, or lot of land described as follows, to wit:

1715 - 1717 - 1719 - 1723 N STREET, N. W., WASHINGTON, D. C.

## TERMS OF SALE:

The Purchaser agrees to pay Five Hundred Thousand 00/100 (\$500,000.00) cash at the date of conveyance, of which sum this deposit shall be a part.

It is agreed that the Purchaser and/or his agents, shall have the right to enter on to said property at any time prior to settlement for purposes of surveying, engineering and such other work as they may deem desirable or necessary that does not result in a change in the present character of said property.

**TITLE.** The property is sold free of encumbrance except as aforesaid; title is to be good of record and in fact, fully insurable by a title company of purchaser's selection, and merchantable; the property covered by this contract shall be subject to no easements, covenants, conditions, or restrictions, recorded or unrecorded as could, in Purchaser's judgment, in any manner whatsoever affect or interfere with the development and/or use of the same under Washington, D.C. zoning and applicable building regulations; otherwise the deposit is to be returned and sale declared off at the option of the Purchaser, unless the defects are of such character that they may be remedied by legal action, but the Seller is hereby expressly released from all liability for damages by reason of any defect in the title. In case legal steps are necessary to perfect the title, such action must be taken promptly by the Seller at his own expense, whereupon the time herein specified for full settlement by the Purchaser will thereby be extended for the period necessary for such prompt action, but not to exceed 90 days unless Purchaser consents. 331b

**COSTS.** Property is to be conveyed in the name of CHARLES C. MOTTLEY or ASSIGNEE and the Purchaser will order the examination of title and the preparation of all necessary conveyancing papers, and agrees to pay the Title Company charges, tax certificate, conveyancing, notary fees, state revenue stamps, if any, recording charges for any purchase money trust; provided, however, that if upon examination the title should be found defective and it is not remedied as aforesaid, the Seller hereby agrees to pay any and all above mentioned costs incurred.

**SETTLEMENT.** Time is of the essence of this Contract and settlement shall be within 60 days from the date of acceptance hereof by the Seller (see additional provisions).

Settlement is to be made at the office of the Title Company or attorney searching the title; to deposit with the Title Company or attorney the cash payment as aforesaid, the deed of conveyance for execution and such other papers as are required of either party by the terms of this contract shall be considered good and sufficient tender of performance of the terms hereof. It is agreed that, if required, funds arising out of this transaction may be used at settlement to pay off any existing encumbrances.

Seller agrees to execute and deliver a good and sufficient general warranty deed, and to pay for Federal revenue stamps on the deed.

The risk of loss or damage to said property by fire or other casualty until the deed of conveyance is recorded is assumed by the Seller.

**ADJUSTMENTS.** Rents, taxes, water rent, insurance and interest on existing encumbrances, if any, and operating charges are to be adjusted to the date of the transfer. Taxes, general and special, are to be adjusted according to the certificate of taxes issued by the Collector of Taxes of said county, except that assessments for improvements completed prior to the date hereof, whether assessment therefor has been levied or not, shall be paid by the Seller or allowance made therefor at the time of transfer.

All written notices of violations of Municipal orders or requirements noted or issued by any department of said county, or action in any court on account thereof against or affecting the property at the date of settlement of this contract shall be complied with by the Seller and the property conveyed free thereof.

**POSSESSION.** See provision below.

**ACCESS.** The Seller warrants and covenants that the property has vehicular and pedestrian ingress and egress to the street at all points fronting on N. Street and the  
alley behind the property.

**ADDENDUM.** The provisions set forth on the addendum attached, if any, are included and made a part of this contract.

ADDITIONAL PROVISIONS.

331c

1) Purchaser has 60 days from the date of ratification hereof to secure financing or contract is null and void and the \$5,000.00 deposit is returned to buyer.

2) Seller will be responsible for paying 4% annual interest on all monies put up by buyer.

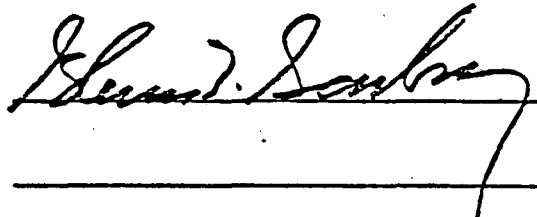
3) It is agreed that seller shall lease entire premises from buyer for 6 months following settlement at a rental of \$1,500 dollars per month payable monthly said tenancy cancellable by seller upon 60 days written notice to the buyer, and that an appropriate lease to this effect will be entered into by the parties at settlement.

NOTICE. Whenever notice is to be given under the terms of this contract, such notice shall be deemed to have been given when enclosed in an envelope having the proper postage, addressed as set forth herein to the party to receive such notice and deposited at a U.S. Post Office. The date at which such notice shall be deemed to have been given, shall be the date of the postmark on said envelope.

AGENCY. It is acknowledged by the parties that no agent is entitled to any commission for this transaction.

The principals to this contract mutually agree that it shall be binding on them, their and each of their respective heirs, executors, administrators, successors and assigns; that the provisions hereof shall survive the execution and delivery of the deed aforesaid and shall not be merged therein; that this contract contains the final and entire agreement between the parties hereto, and neither they nor their agents shall be bound by any terms, conditions, statements, warranties or representations, oral or written not herein contained.

Glenz T. Seaborn, President

 (SEAL)

O. W. Riegel, Secretary

\_\_\_\_\_ (SEAL)

\_\_\_\_\_ (SEAL)

This contract ratified in its entirety by all parties hereto this \_\_\_\_\_ day of

\_\_\_\_\_ 19\_\_\_\_.

December 1, 1972

The Honorable Sol Linowitz  
Coudert Brothers  
One Farragut Square South  
Washington, D.C. 20006

Dear Sol:

In reply to your letter of November 24, 1972, I am pleased to accept your invitation to join the Board of Directors of Datran. This seems like a very interesting assignment, and I am attracted to it by the opportunity that it will afford to have an additional regular contact with you.

I might have some problems in the first year in meshing my already established schedule with the meeting schedule of the Board.

The meeting of the Board of the Dreyfus Third Century Fund on Monday, December 11, should give us an opportunity to discuss this further, should that be necessary.

With warm regards,

Cordially,

Glenn T. Seaborg

GTS/sms

202 783-3010

CABLE ADDRESS

"TREDUOC" WASHINGTON

TELEX-24594 CBLAW

**COUDERT BROTHERS**  
**ATTORNEYS AND COUNSELLORS AT LAW**  
 ONE FARRAGUT SQUARE SOUTH  
 WASHINGTON, D. C. 20006

NEW YORK CITY 10017  
 200 PARK AVENUE

PARIS, 8 E  
 52 AVENUE DES CHAMPS-ELYSEES

LONDON, W1X 8LB  
 44 HILL STREET

1040 BRUSSELS, BELGIUM  
 RUE BELLiard, 20

TOKYO, JAPAN  
 TANAKA TAMAKI NISHI  
 40 SHIBAKOTOHIRA-CHO, MINATO-KU

HONG KONG  
 6 DES VOEUX ROAD, CENTRAL

SINGAPORE 1  
 1 ROBINSON ROAD

November 24, 1972

1525 12/22/72

Dr. Glenn T. Seaborg  
 University of California  
 Lawrence Berkeley Laboratory  
 Berkeley, California 94720

Dear Glenn:

The Chairman of the Board and the President of Datran (Data Transmission Company, Inc.) - with the enthusiastic endorsement of the full Board - have asked me to extend this invitation to you to join the Board of Directors of Datran.

You may remember our conversation in California about the company and the reason why I find it an interesting and even exciting enterprise. You may remember that the Federal Communications Commission has authorized the construction of a nationwide computer network, and Datran is in the process of launching such a program. The outside members of the Board of Directors are Erwin Canham, Editor of the Christian Science Monitor; Robert Strauss, Texas lawyer and former Treasurer of the Democratic National Committee; and I. You would be the fourth outside member, and there are, as I recall, an equal number of inside Directors.

The company has been largely financed by the parent company, University Computing Company of Dallas, but is presently seeking financing through a private placement. Approximately \$25 million has thus far been invested by University Computing, and it is planning to commit another \$20 million. Some \$30 million is being sought through a Wall Street financing house.

The Board fee is \$6,000 per year plus \$700 for each meeting attended. Meetings are held about every other month in Vienna, Virginia, the headquarters of the company. The company, of course, also pays the expenses for attending meetings. There is also an arrangement whereby Directors are afforded the opportunity to purchase approximately 1,000 shares of stock at a price significantly lower than the contemplated offering price when the stock is publicly issued.



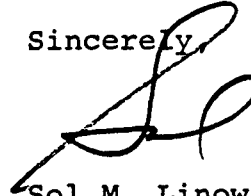
Dr. Glenn T. Seaborg  
Page two  
November 24, 1972

For a number of reasons, I hope you'll decide to accept the invitation. I do think you'll find it an interesting assignment. From my personal point of view, however, I'm especially eager to have this further opportunity to see you on a more regular basis.

If you would like any other details about the company or its operations, please don't hesitate to give me a call.

With best regards,

Sincerely,

A handwritten signature in black ink, appearing to be 'Sol M. Linowitz', written in a cursive style. The signature is positioned above the printed name.

Sol M. Linowitz

neighboring Challenge Development Company property which constitutes a threat to the park. I rode in a car with Jerry Kent, Grant Reid, Mary Jefferds, and Jane Putnam.

We then drove to the Alameda Creek Trail parking area in our individual cars, left them there, and continued in cars furnished by the cities of Fremont and Newark. I rode in the lead car with Larry Milnes (of the City of Fremont staff), Cogswell and Margie Bowman. We drove along the Alameda Creek Trail (a gravel road) by the Niles Gravel Pits (potential aquatic park). We made a lunch stop (our own picnic lunches) at the Niles Community Center where a number of exhibits of potential Regional Park sites of the area were displayed. We then continued in the cars through Niles, where the old S and A movie studios (1913-1918) were situated, and saw some of the movie stars' cottages still standing on Second Street (Ben Turpin, Bronco Billy Anderson, etc.).

We continued, through Niles Canyon (where "the Great Train Robbery" with Charlie Chaplin was filmed), stopped to view the Sunol and Pleasanton Ridges, via Mission Pass to Vargas Road Plateau (adjacent to and above Niles Canyon), along Mill Creek Road to nearby Mission Peak (2517 feet). We were joined in our car by Dr. Robert Fisher (Mission Peak Heritage Foundation). Near here, at the Vieux Ranch, are the Indian petroglyphs which have not yet been deciphered. Dr. Fisher offered to take us on a hike to these at some time to be arranged. After driving up as far as cars can go, a few of us hiked to the top of Mission Peak. It was an overcast day.

We next drove to Higuera Adobe in the Warm Springs district of Fremont (built about 1840, now barely still standing, privately owned with no upkeep), then to the site of the old Warm Springs Hotel (built about 1853, a famous resort for San Franciscans). We proceeded to the Weibel Winery, where most of the group participated in some wine tasting. I rode back to the Alameda Creek Trail parking area in one of the Fremont cars, got into my car and drove home to Lafayette, arriving at about 5:45 p.m.

#### Sunday, December 3, 1972 - Lafayette - Berkeley

I worked cleaning up after the roofers and the remnants of the pile of debris (which was removed by Lafayette Garbage Disposal earlier this week) during the morning.

Ray Hasey (whose mother worked for Doral 10 years ago and is now a librarian at Contra Costa County Library in Pleasant Hill) came by after lunch. He had called last night concerning problems with the master development plan for Briones Regional Park and I invited him to today's CUWA meeting. Ray rode with me to the Roger Reeve residence, where I presided over the meeting.

Those present were Joyce Burr, Alice Howard, Marian Reeve, Don de Fremery, Molly Reeves, Bill Landis, Tom Bowman, Margie Bowman, Mary Jefferds, Neil Havlik, Leonora Strohmaier, L. Roach, Catherine Webb, Darlene Schmidt, Helen Morrison, Leo Brewer, Sue Watson, Elijah Banks, and Geraldine Jackson. Margaret Bowman took the minutes (copy attached).

*Red underline means work to be done.*  
309 CUWA Mtg

CUWA Meeting, December 3, 1972, at Reeves' home, 1052 Merced, Berkeley.

Present: J. Burr, A. Howard, M. Reeve, D. DeFremery, Molly Reeves, B. Landis, T. Bowman, M. Bowman, M. Jefferds, G. Seaborg, M. Havlik, E. Strommaier, L. Strommaier, L. Roach, C. Webb, D. Schmidt, R. Hasey, H. Morrison, R. Reeve, L. Brewer, S. Watson, E. Banks, G. Jackson.

Dr. Seaborg called the meeting to order and had each person introduce himself and explain his or her main concern. He then reviewed briefly occurrences since the last CUWA meeting, i.e. election results. We discussed nominating someone for membership in a Coastal Commission, but no action was taken.

The Treasurer, Mrs. Jackson, deposited \$88.50 in a new CUWA account at the First Enterprise Bank of Oakland. After some payments were made, the account contains \$52.82.

Tom and Margaret Bowman gave brief reports on the present status of Huckleberry Preserve, in regard to the condemnation suit and the Master Plan, and also in regard to ABAG's Open Space Plan. She will obtain the ABAG maps before the next meeting of CUWA. On Jan. 27 the Task Force members will be taken to Huckleberry preceding their outing to the Coal Mines. Alice Howard will provide Native Plant Society Vegetation lists and will work with Margaret Bowman to draw up a proposal, regarding the acquisition of the the area, to present or mail to task force members for their study preceding their trip to the trail. Molly Reeves is the task force member acting as field trip liaison.

Mrs. Burr has copies of the Olmstead Report, the original Regional Park document, and the California Natural Areas Coordinating Council report, both of which should be made available to the appropriate task force subcommittee.

Marian Reeves led a discussion about the problem of residential development threatening Sunol Regional Park and the name of George Castellani was suggested as a person who might be helpful. Supervisor Cooper is the "swing vote" on the Alameda County Board of Supervisors. Roger Reeve, CUWA secretary, is authorized to write a letter to Mr. Cooper regarding our position as opposed to development of the area. Sue Watson will send him the People for Open Space Statement *for the chairman to send.* on the subject.

An emergency is shaping up at Pt. Richmond. It appears that the Regional Park there will not consist of the 100 to 200 acres originally hoped for because Arco and Standard Oil have other plans for their property. Cathy Shulz wrote an article in the Richmond Independent. People should be reminded that this park has the potential as an Urban Threshold Park. Bill Landis will help investigating this.

Catherine Webb reported on the discouraging turn of events at Albany Hill, but told of their optimism of obtaining several thousand dollars for environmental purposes at the site and also of a suit the Friends of Albany Hill might file. They are also starting a petition for a Referendum regarding the heights and densities zoning in Albany. Neal Havlik would like to work on restoring vegetation and trails on the unbuilt part of the hill.

2.

The citizens of the neighboring city of El Cerrito are requesting help from their city council in regard to that city being an "injured Party" because of the possible accumulation of polluted ~~air~~ air arising from the increased traffic, the newly opened Bart station and parking lot, all of which will have ~~less~~ fewer bay breezes because of the height of the Albany Hill construction. Catherine Webb is to send information on this to Dr. Seaborg so that he can send a CUWA letter to the press.

Dr. Bill Landis spoke of the Regional Park District Master Plan for Brooks Island, for which \$10,000 has been budgeted. There are important ecological and archeological aspects to this island, as well as possible meteorological use of the nearby "Brothers" islands. The membership of CUWA carried unanimously a motion to the intent that we are concerned and will henceforth express our interest in the development of the Park plan for these islands. Dr. Landis will continue to inform us.

Marian Reeve will serve as our repository for ideas and concerns as they accumulate between our meetings.

Mrs. Burr will investigate and report further information about the possible installation of Federal bicentennial parks in this area.

The largest potential for Open Space lands in the 2 counties is the East Bay Municipal Utilities District. At the Dec. 12 Board meeting there will be a request made that the district representation be divided into 7 wards instead of the 5 that now exist. They will be opening up San Pablo Reservoir soon, and Bill Hartman in the Land Division has spoken of a 5 mile rim trail at Lafayette Reservoir *and*

*will pursue this.*

Ray Hasey, of Diablo Valley College, graciously offered photographic help to any of us in need, environmentally speaking, with any of our projects. He told us of the new Master Plan the Regional Park District is planning for Briones Regional Park, and on which the Board will vote on Tuesday, Dec. 12. CUWA will have representation at that meeting to object to any development occurring before the Overview and Task Force reports have been submitted. (Subsequently, Dr. Seaborg wrote a letter to the Board, to be read there by Tom Bowman, and he also made phone calls to Board members on the subject.) George Castellani's name was mentioned as possible help at the Board meeting.  
(Is Bill Landis to contact him?)

Marian Reeve spoke of the probable building of the Mountain Village development in the Oakland hills. No action was taken by CUWA.

The next meeting will be held on Sunday, February 4.

Respectfully submitted,

Margaret Bowman

*Some one (?) - I forgot*

I opened the meeting at 2:15 p.m. with my chairman's report, covering Point Pinole, defeat of the Watson Initiative, etc. We discussed the status of Huckleberry Trail. Molly Reeves will try to arrange a visit of the EBRPD Citizens Task Force to the Huckleberry Trail area for the morning of Saturday, January 27. I shall try to give Stewart Udall (with the help of Leo Brewer) a tour of Huckleberry Trail on or around January 13 when he is in the Bay Area to dedicate the Alameda Creek Trail.

Roger Reeve will draft a letter for me on CUWA stationery to send to Alameda County Supervisor Fred Cooper, urging him to oppose the Charles Moore land development near Sunol Regional Park. Supervisors Joseph Bort and Thomas Bates are with us on this, the other two are against us.

Bill Landis will send a letter in regard to preservation of the Point Richmond area. Catherine Webb will draft a letter for me to send on CUWA stationery to local newspapers pleading for moderation on the Albany Hill apartment house development, and Joyce Burr will attend the El Cerrito Council meeting tomorrow night to plead our case. (Darlene Schmidt represents an El Cerrito Committee which is opposing the Albany Hill development.)

Bill Landis will make a further study of the educational value of Brooks Island and environs. Don de Fremery will urge the East Bay Municipal Utility District to approve public use of the hiking trail on the ridge around Lafayette Reservoir.

Ray Hasey described some plans for the development of Briones Regional Park to include paved roads, private horse show staging areas, and other moves that would spoil its wilderness beauty. Sue Watson will attend the tour of Briones by the EBRPD Board on December 5, and she, Tom and Margie Bowman, George Castalani, and Molly Reeves will attend the Board meeting on December 12 to argue against this improper development of Briones.

We set the time of 2:00 p.m., Sunday, February 4, 1973, for the next meeting of CUWA at the Roger Reeve home. I drove Ray to the John Muir Hospital in Walnut Creek, where he works, then on home, where I arrived at about 6:00 p.m.

Monday, December 4, 1972 - Berkeley

I went down to the Physical Sciences Lecture Hall to hear George Pimentel's Chemistry 1A lecture from 9:10-10:00 a.m. I then returned to my office on the hill to continue making phone calls and then went back down to my office at 446 Latimer Hall to hold my regularly scheduled office hour.

I went to the Howard Room of the Faculty Club for lunch with the Chemistry Department faculty and then taught my Chem 1A section in Room C, where we gave the third quiz for the quarter (copy attached).

I sent to Mstislav V. Keldysh, President of the USSR Academy of Sciences, pictures taken during his visit to LBL on October 24.

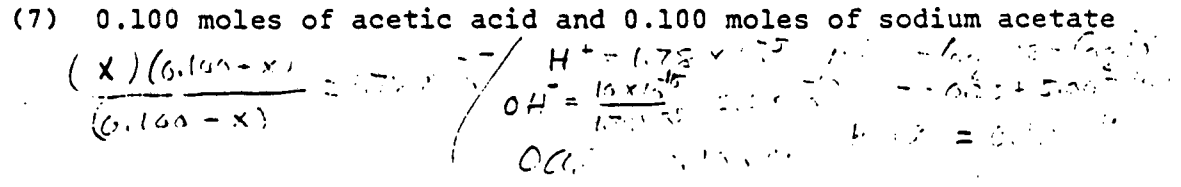
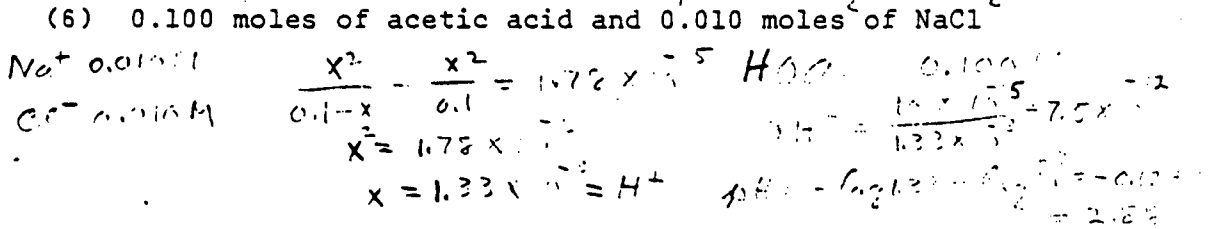
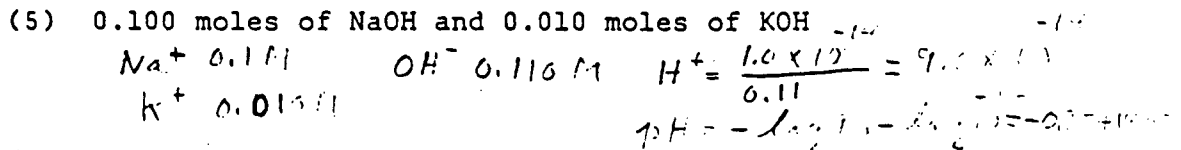
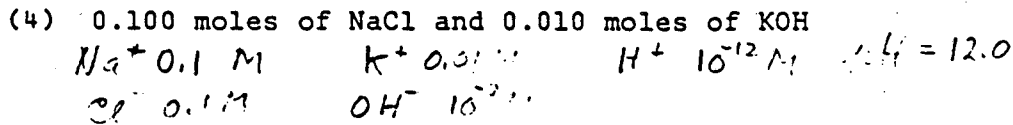
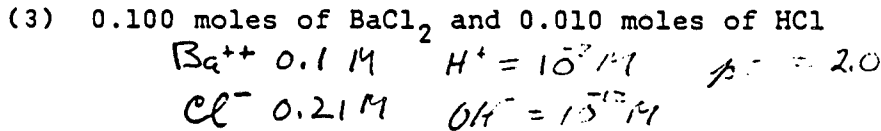
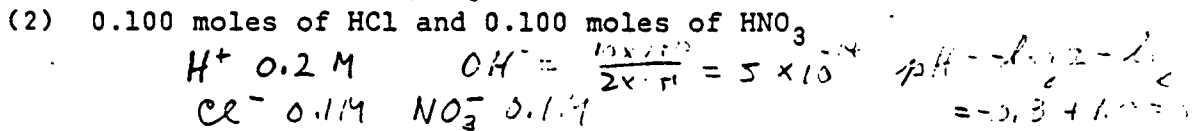
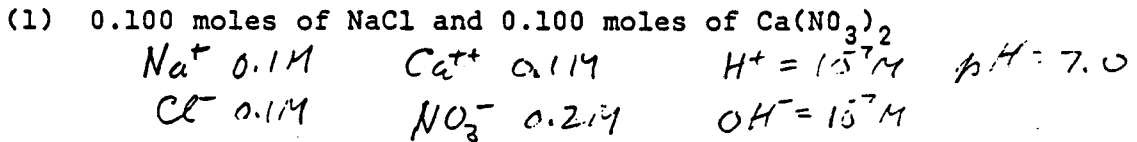
Chem 1A, Lab Section 2  
 Mon, Dec 4, 1972  
 60 pts OPENBOOK

Name \_\_\_\_\_  
 Faculty Instructor \_\_\_\_\_  
 T.A. \_\_\_\_\_  
 Room \_\_\_\_\_

The following substances are added to one liter of water at 25°C. For each solution,

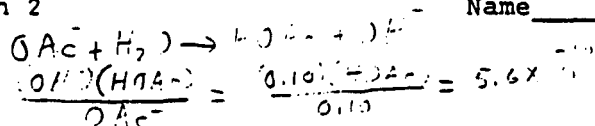
(a) List the concentrations of all molecules or ions, other than water, that are above  $10^{-5}M$  at equilibrium.

(b) Give the concentrations of  $H^+$  and  $OH^-$  and the  $pH$  for each solution. For full credit, concentrations should be correct within 5% and the  $pH$  should be correct within 0.1 units. 3 pts each for parts (1) to (5) and 5 pts each for parts (6) to (14).

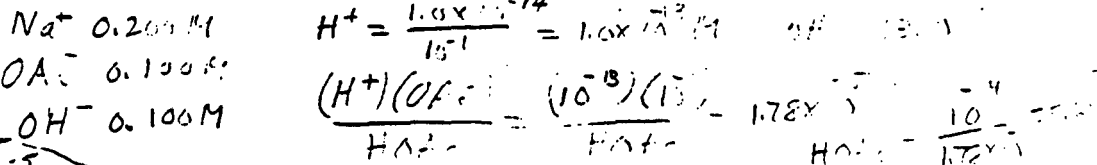


Chem 1A, Lab Section 2  
 Mon, Dec 4, 1972  
 60 pts OPENBOOK

Name \_\_\_\_\_

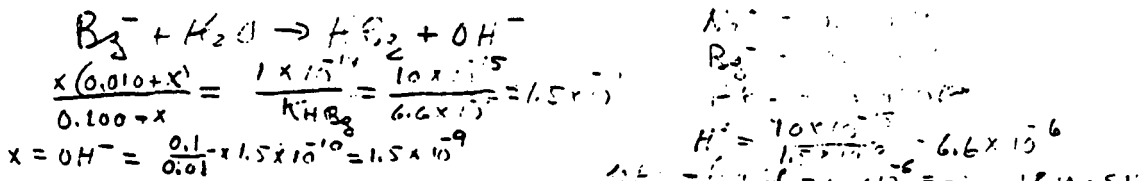


(8) 0.100 moles of acetic acid and 0.200 moles of sodium hydroxide

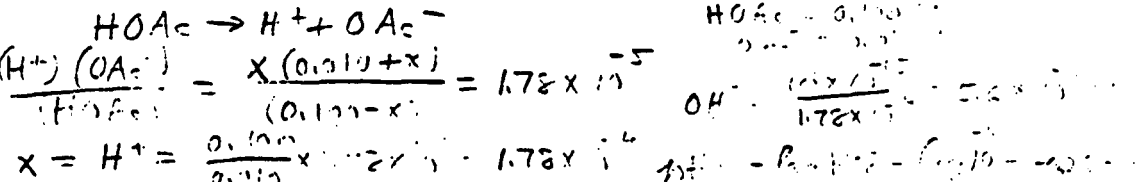


$(x)(0.10-x) = 6.6 \times 10^{-5}$   
 $\frac{x(0.10-x)}{0.10-x} = 6.6 \times 10^{-5}$   
 $H^+ = \frac{0.1}{1.5 \times 10^5} = 6.6 \times 10^{-6}$   
 $= 6.6 \times 10^{-6}$

(9) 0.010 moles of benzoic acid and 0.100 moles of sodium benzoate

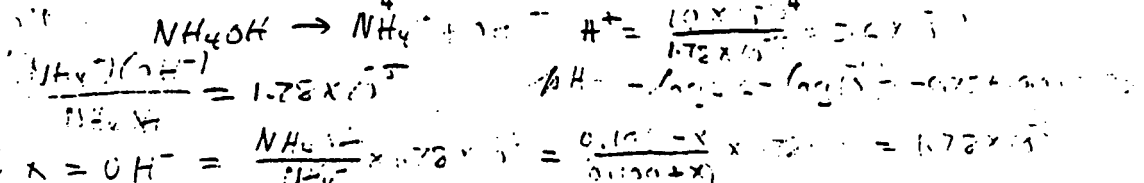


(10) 0.100 moles of acetic acid and 0.01 moles of sodium acetate



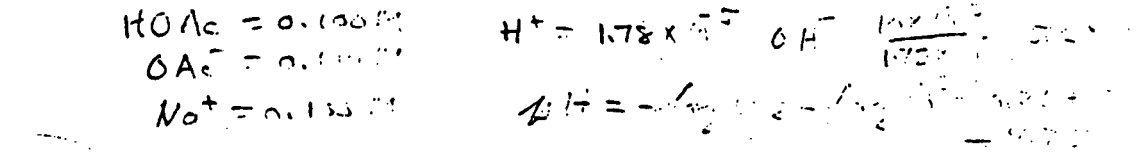
Nearly neutral (7)

(11) 0.100 moles of NH<sub>4</sub>OH and 0.100 moles of NH<sub>4</sub>Cl



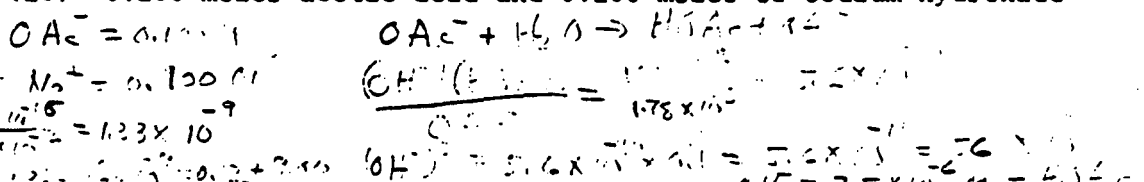
NH<sub>4</sub>OH  
 NH<sub>4</sub>Cl  
 nearly neutral (7)

(12) 0.200 moles of acetic acid and 0.100 moles of sodium hydroxide



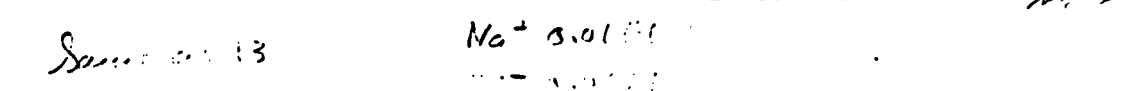
Strong acid (7)

(13) 0.100 moles acetic acid and 0.100 moles of sodium hydroxide



10<sup>-6</sup> M  
 10<sup>-9</sup> M

(14) 0.100 moles of sodium acetate and 0.01 moles of NaCl



Strong acid (13)

Frank Oppenheimer called to say that he was most anxious to show the Chinese delegation his museum while they are here. I suggested we talk about this while we are at the Lawrence Hall of Science Advisory Committee meeting on Tuesday.

At 3:40 p.m., I attended with Earl Hyde a meeting of the Scientific and Educational Advisory Committee for the Lawrence Berkeley Laboratory (the Townes Committee). They had been meeting all day and will meet tomorrow morning as well to discuss relationships between the Lab and the Berkeley campus (their agenda is attached). Present were: Charles Townes, Edward L. Ginzton, Norman Hackerman, Roger Hildebrand, Burton Moyer, and Harold Ticho.

Earl described the breakdown in manpower in the Nuclear Chemistry Division as between postdoctoral students, graduate students, faculty and non-faculty, permanent staff, as well as our various summer programs and the SuperHILAC Users Association. The emphasis of their questioning was on the effect on the Nuclear Chemistry Division if the Bevatron is shut down as a high energy nuclear physics facility. We indicated that this wouldn't affect us very much provided the BEVALAC was put into operation. I described the proposed booster link in the BEVALAC. I indicated that, if the Bevatron were shut down for use in high energy nuclear physics, it would increase the prospects for the release of the \$2 million for the BEVALAC and for the operation of the BEVALAC.

Suki and I took a hike to the water tank. It was a very cold day, with some snow flurries in south Lafayette at 5:00 p.m.

#### Tuesday, December 5, 1972 - Berkeley

I attended the meeting of the SuperHILAC planning group, with Ghiorso, Nurmia, Nitschke, and the Alonsos present. We discussed vacuum problems with Adam, counter problems with SASSY, and the Flerov letter to McMillan complaining about the Ghiorso article on "Comments on the Chemical Separation of Kurchatovium" (copy attached). After, I visited our chemistry lab in room 203 to discuss the status of our programs.

Howard Greyber, the new AAAS Director of Meetings, came into my office at 11:00 a.m. to discuss our plans for today's first meeting of the Advisory Committee for the 1974 Annual Meeting. We then drove down to the campus in Howard's car, going to the Lewis Room of the Faculty Club. I presided over the meeting, which lasted from 12:15-2:00 p.m. Present were David Blackwell, Glen Grant (representing Albert Bowker), Ivan King, Philip Lee, Dale Compton (representing Hans Mark), James Meyer, Frank Oppenheimer, Arthur Schawlow, Gunther Stent, Howard Vesper, and Sheila Saxby, who took the minutes (copy attached).

I opened the meeting by introducing Howard, who made some general remarks about his hopes for this meeting. I acquainted the committee with the history of past AAAS meetings and the new directions--broader membership and international focus--which the AAAS is taking. The rest of the meeting was largely a brainstorming session.



Agenda for the Third Meeting  
Scientific and Educational Advisory Committee for LBL  
December 4 and 5, 1972

To be held in Room 4205, Building 50B Conference Room  
Lawrence Berkeley Laboratory

Monday, December 4

- 9:00 Executive Session
- 9:15 Director Edwin McMillan - Statistics on campus relations
- 10:00 Provost Roderic Park
- 10:30 Professor Herbert Blumer
- 11:00 Dean Virgil Schrock
- 11:45 Professor Eugene Commins
- 12:30 Lunch
- 1:15 Professor David Shirley
- 2:00 Professors John Whinnery and Robert Thornton
- 3:00 Dr. William Wenzel
- \* 3:30 Professor Glenn Seaborg and Dr. Earl Hyde
- 4:00 Professor Leo Brewer and Dean Victor Zackay
- 4:30 Executive Session
- 5:30 Adjourn
- 6:00 Dinner at Narsai's, 385 Colusa Avenue, Kensington

Tuesday, December 5

8:00 Professor James Bassham  
8:30 Dr. James Born  
9:00 Executive Session  
10:00 Dr. Jack Hollander  
10:30 Available for additional discussions  
11:00 Executive Session  
12:00 Adjourn

Committee members expected to attend:

Professor Charles H. Townes, Dept. of Physics, UCB

Dr. Edward L. Ginzton, Varian Associates

President Norman Hackerman, Rice Univ.

Dean Roger Hildebrand, Univ. of Chicago

Dean Burton J. Moyer, Univ. of Oregon

Professor Harold K. Ticho, Dept. of Physics, UCLA

*Burton*  
*W. Hildebrand*  
L

attach to  
journal for Dec 5, 1972

ОБЪЕДИНЕННЫЙ ИНСТИТУТ ЯДЕРНЫХ ИССЛЕДОВАНИЙ

Лаборатория ядерных реакций

Почтовый адрес: Дубна, Московской области.

	196 г.	Телефоны: 2-26-22-34, 2-26-22-61	При ответе ссылаться на № _____
--	--------	-------------------------------------	------------------------------------

Academician G.N.Flerov  
 Director  
 Laboratory of Nuclear Reactions  
 JINR, Head Post Office, P.O.Box 79  
 Moscow, USSR

November 17, 1972

Professor E.M.McMillan  
 Director  
 Lawrence Berkeley Laboratory  
 Berkeley, California, USA

Dear Professor McMillan,

It is with great pleasure and interest that I have read the comprehensive and informative 1971 Annual Report of the LBL including "The Comments on "The Chemical Separation of Kurohatovium" by A.Ghiorso et al.

However I cannot help expressing to you my and my colleagues' surprise and disagreement with this article in both the essence and form. I am very sorry that you by permitting the publication of such an article in the Annual Report of your Laboratory approve to some extent of the manner in which this discussion is being held.

I do not exclude that the lack of understanding apparent facts which is evident in this paper is a result of Professor A.Ghiorso not being a chemist. At any rate I believe that the only solution in this situation would be a common discussion of both physicists and chemists from the two sides.

Since, to our much regret, Professor A.Ghiorso cannot find time for visiting Dubna in spite of repeated invitations from our Laboratory, I would like to suggest that such a discussion take place at Berkeley in the nearest future. Professor I.Zvara who is presently at Oak Ridge, would be able to participate in this discussion. I fully credit Professor I.Zvara and am sure that he will be in a position to answer all possible questions of Professor A.Ghiorso and his colleagues. On his part, Professor Zvara is prepared to pay this visit and fulfil this somewhat unpleasant but apparently necessary duty provided you send him an appropriate invitation.

I look forward to hearing from you.

Sincerely yours,

*I. G. Zhurav*  
 G. N. Flerov

12/4/72  
 cc: A. Ghiorso  
 G. Seaborg

ADVISORY COMMITTEE FOR THE 1974 ANNUAL MEETING  
American Association for the Advancement of Science  
(San Francisco, February 25-March 2, 1974)

Minutes of Meeting  
12:00-2:00 p.m.  
December 5, 1972

The Advisory Committee held its first meeting in the Lewis Room of the Men's Faculty Club, University of California, Berkeley. Present were: David Blackwell, Glen Grant (representing Albert Bowker), Howard Greyber, Ivan King, Philip Lee, Dale Compton (representing Hans Mark), James Meyer, Frank Oppenheimer, Arthur Schawlow, Gunther Stent, Howard Vesper, and Glenn Seaborg, presiding.

Seaborg opened the meeting by introducing Howard Greyber as the new AAAS Director of Meetings. He defined the committee's task as brainstorming for the 1974 Annual Meeting: to suggest themes, symposia topics, persons who might serve as speakers, innovative program ideas born out of the Bay Area location of the meeting, and general structure of the meeting. Greyber reiterated that AAAS wants to make this a productive meeting for the entire scientific community in the Bay Area, as well as for California and the rest of the nation. He expressed the hope that the meeting would incorporate the Pacific Basin.

Seaborg outlined the arrangements for the 1972 meeting to be held in Washington, D.C. on December 26-31 (Dillon Ripley, Chairman) and the 1973 meeting to be held in Mexico City on June 20-July 4 (President Luis Echeverria, Honorary Chairman). He reviewed the history of AAAS Annual Meetings and some of the changes in the foci of AAAS, particularly towards broader membership and international concerns. While AAAS has traditionally held its Annual Meeting during Christmas week, the format is being changed in 1973 with the international meeting in Mexico City, to be followed by the 1974 meeting in San Francisco. Thereafter, the Annual Meetings will be held in the spring.

Committee Membership and Procedure.

It was suggested that the committee membership include science writers, local and state governmental officials, and industrial leaders in the Bay Area. [These suggestions will be reflected in the latest committee list.]

Greyber will be on call to receive and coordinate ideas from the committee individually as well as in meetings. The committee is asked to write or call him with ideas as they develop--sending copies of such correspondence to Seaborg--and Greyber will circulate this input throughout the committee.

December 6, 1972

Greyber asked the committee members to serve as spokesmen in the Bay Area, particularly as representatives of their own institutions (schools, museums, etc.). Ivan King suggested that the members also involve various local scientific societies of which they are members, e.g., the American Astronomical Association. King pointed out that considerable liaison will be required between several groups who are all possibly doing the same job. This is particularly important when the various sections organize their programs; correcting past flaws, these should be structured with regard to the overall themes.

### Format and Themes

The group discussed the extreme success of the Cosmic Evolution series which was held in San Francisco last summer. It was pointed out that each lecturer, apart from being an expert in his field, was an extremely good speaker. Secondly, the arrangement of talks was such that each was a logical extension of the preceding talks towards covering the entire subject. Accordingly, it was suggested that the AAAS meeting have a morning lecture series along the same lines.

Oppenheimer noted that if the themes are appropriate, we can probably get the numerous museums to set up corresponding exhibits (e.g., Oppenheimer Exploratorium, California Academy of Sciences, Lawrence Hall of Science, Oakland Museum, etc.).

Suggestions of possible speakers included President Richard Nixon, scientists from the People's Republic of China, and Chauncey Starr.

Greyber indicated that the meeting might best be built around six to eight themes. Out of the committee's discussion the following emerged as possible over-all themes or symposia topics:

1. Regional planning, land use, pollution (a matter having tremendous impact on the West Coast). [Meyer]
2. Ecology of developed lands.
3. Aging.
4. Urban problems.
5. Regulation of technology--the energy area, health care technologies, the drug problem. [Lee]
6. Reasonable risks and reasonable costs--voluntary and involuntary. [Schawlow, Vesper, Lee] It was thought that by 1974, the extreme aspects of environmental protection in relation to current energy resources, and its effect on (for example) jobs, may be a considerable issue.
7. Public understanding in decision making.

AAAS Advisory Committee - 3 -

December 6, 1972

8. Coastal land planning and zoning (e.g., Lake Tahoe, Bay Area, Los Angeles basin).
9. Earthquakes
10. The future of machine intelligence, incorporating neural physiology in the discussion. [Oppenheimer]
11. Evolution theme. [Stent]

Next Meetings.

The next two meetings of the committee will be: Tuesday, February 6, and Tuesday, April 3.\* Both meetings will be held in the Men's Faculty Club on the University of California Berkeley campus. Luncheon will be served. It is proposed that members plan to meet from 12:00 to 2:00 p.m.

/sms

---

\* Changed to Friday, March 30, 1973.

While in my office during the day, I continued to make phone calls in connection with the visit of the Chinese scientists and in connection with fund-raising from corporate executives for the Mexico City meeting. I talked with Mayor Joseph Alioto in San Francisco, who said he would make every effort to be at the farewell banquet on December 14. If he can attend, he will make a brief toast.

I called Daniel Mazia, after having consulted with Anne Keatley, to indicate that he should not enter into a discussion of international science during the discussions in the Chemistry Department on Thursday morning; he said that he had come to the same conclusion.

At 3:10 p.m., I attended a meeting of the Advisory Committee of the Lawrence Hall of Science (minutes attached). Present were: George Pimentel (Chairman), W. M. Laetsch (Director), Harvey White, David Blackwell, James Cason, J. Desmond Clark, Howell Daly, John Helms, Jonas Langer, Todd La Porte, C. Don MacNeill, John Matlin, Frank Oppenheimer, Lester Packer, Frederick Reif, Lloyd Scott, Wilbur Somerton, David Wake, Robert Content, Leon Henkin, and Robert Karplus.

The meeting began with Laetsch's showing a film covering the various activities of LHS and a general status report by him. There is a sum of about \$30,000 available for a brief time from a donor (\$15,000 interest) for use of the interest to bring in world-famous scientists to give Lawrence Memorial Lectures once a year. Laetsch asked the Advisory Committee to make a recommendation for a lecturer for this academic year; Pimentel will appoint a subcommittee to make a choice before the end of the year.

At 4:30 p.m., we went into executive session. Pimentel suggested that the following serve on the Planning Committee: Matlin, Seaborg, Reif, Oppenheimer, Wake. The Planning Subcommittee will choose a computer expert as a member at its first meeting. Pimentel and Laetsch will serve as ex officio members. The Committee will decide whether a student member should be added. La Porte suggested that the Committee consider LHS activities in the interpretation of science and technology to the general public.

Suki and I took our regular hike. Dave gave his seminar, required of first-year graduate students, this afternoon to the Zoology Department graduate students. He spoke on reptiles, using his king snake as an exhibit. President Harry S. Truman was taken to a hospital in Kansas City today because of a serious condition of pulmonary congestion; the prognosis seems to be very bad.

Wednesday, December 6, 1972 - Berkeley

I continued my phone calls in connection with the follow-up to the AAAS solicitation for funds to support the Mexico City meeting. I also made calls to a number of political figures to invite them to the farewell dinner for the Chinese scientific delegation. I talked with Patricia Gayman, Scheduling Secretary for Governor Reagan, and the offices of Senator John Tunney, Senator Alan Cranston, Congressman Ronald Dellums, and Congressman Pete McCloskey. I suggested that, if any of them couldn't attend, they send a message.

Minutes of the Meeting of the  
Advisory Committee to the Lawrence Hall of Science

December 5, 1972

ATTENDANCE

Advisory Committee

George Pimentel, Chairman  
David Blackwell  
James Cason  
J. Desmond Clark  
Howell Daly  
John Helms  
Jonas Langer  
Todd LaPorte  
C. Don MacNeill  
John Matlin  
Frank Oppenheimer  
Lester Packer  
Frederick Reif  
Lloyd Scott  
Glenn Seaborg  
Wilbur Somerton  
David Wake  
Harvey White

LHS Executive Committee

W. M. Laetsch, Director  
Robert Content  
Leon Henkin  
Robert Karplus

Absent

George Briggs  
Nathan Cohen  
R. Brady Williamson  
Harry Morrison (LHS)

Professor Pimentel opened the meeting at 3:15 p.m. by introducing the new members of the Advisory Committee, John Helms, J. Desmond Clark, and C. Don MacNeill. Also new members, but absent, were George Briggs and R. Brady Williamson. No student member had, as yet, been appointed.

Director's Report

Professor Laetsch introduced the members of the LHS Executive Committee who were present, Robert Karplus, Robert Content, and Leon Henkin, and then showed a brief but informative videotape which summarized the LHS's various activities.

Spring and Summer Reports. Several new programs have been added: (1) Discovery Van (a Dupont grant paid for the van)--which carries LHS activities to the schools. (2) School



-2-

visit program--3 days a week 100-150 students come to LHS to take part in activities. This helps not only the schools' science programs, but is also beneficial to LHS in providing student-subjects for testing curriculum ideas. (3) International program--in cooperation with UNESCO, LHS serves as a training center for international science interns.

A proposal has been submitted to NSF requesting funds to study how adults are best served by science education. This is a result of a recent examination of the "weekend program," which LHS feels should be concerned more with adult education, for example, computer classes.

Staff Additions and Activities. The new Math and Computer Education Fellow is Mr. Muata. Mrs. Laura Eason is working on a survey of LHS exhibits--who uses LHS, how do they get there, etc.? Mr. George Moynihan is studying the future relationship of SCIS and LHS. Finally, Mr. Robert Content is studying a proposal that LHS staff be increased and that program fees be higher. There are many students working at the LHS now, approximately 70% of them undergraduates and 30% graduates.

Funding. Current funding sources for LHS are:

\$120,000 endowment income  
 \$100,000 Regents' Opportunity Fund  
 \$335,000 self-supporting programs  
 \$900,000 contracts and grants (mostly NSF)

Inflation has cut heavily into the first three funding sources. To make up the difference, money is being sought from private, foundation, and industrial sources. A professional mailing firm has been hired to reach these sources. Also, to encourage membership in LHS, a "Membership Night" (on April 11, this year) has been added to the previous member benefits (free passes to LHS and subscriptions to the Newsletter).

Activities and Exhibits. LHS would like to have more activities, particularly in biology and engineering, but doesn't have the necessary staff to develop all ideas.

Prof. Laetsch called upon Advisory Committee members to help prepare programs for the Level A Activity Halls. For example, he mentioned that some of Prof. Daly's graduate students are now preparing an exhibit on biological control of bark beetles. Prof. Pimentel suggested that this might be a good opportunity for undergraduate research projects.

Lawrence Memorial Lectures. Prof. Laetsch proposed that the task of recommending the lecturer and time for this year's Lawrence Memorial Lecture be undertaken by the Advisory Committee. A fund was set aside in 1958 (\$14,382.50 + \$15,873.00 in interest accrued) to allow LHS each year to bring a person of worldwide reputation to lecture at Berkeley. The fund has not been used yet, but Prof. Laetsch would like to start the program this year.

#### Discussion of Director's Report

Funding. The Regents' Opportunity Fund was discussed. There was some feeling that LHS's share of this fund should be greater because of its increasing number of grants and activities. Mr. Content said that LHS asked the Regents in the Spring to make the LHS share of the Fund proportional to the amount of overhead LHS contributed, but the request was refused. Prof. Cason suggested that perhaps the Advisory Committee could approach the Regents on the subject, while Prof. LaPorte suggested a formal request to reconsider distribution of research funds be made to Vice-Chancellor Christensen. He also said that Merrill Shanks, Director of the Survey Research Center, had already studied the problem and may be helpful in formulating such a request.

Lawrence Memorial Lectures. A subcommittee of three persons, which will meet once before the Winter Quarter Advisory Committee meeting, will be appointed by the Advisory Committee Chairman. The subcommittee will select a slate of possible candidates for the lectureship, to be considered by the full Advisory Committee at its Winter meeting. The

candidates should be good public speakers, preferably pre-Nobel Prize, world-renowned authorities in their fields, and should speak on "subjects at the forefront of human knowledge."

#### EXECUTIVE SESSION

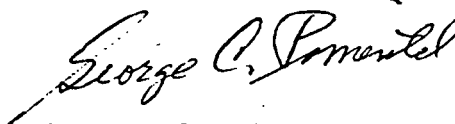
##### Planning Subcommittee

It was decided at the May 24, 1972 Advisory Committee meeting that a standing Planning Subcommittee should be appointed to review and recommend activities at LHS. Those Professor Pimentel asked to serve on this subcommittee were: John Matlin (Education), Glenn Seaborg (Chemistry), Frederick Reif (Physics), Frank Oppenheimer (Palace of Arts and Sciences), and David Wake (Zoology). Professors Pimentel and Laetsch will be ex officio members and a sixth member can be chosen by the Subcommittee. It was suggested that a representative from the computer field might be appropriate and that an individual not on the Advisory Committee might be sought. Professor LaPorte urged that the Subcommittee give attention to interpreting science and technology--how to communicate the impact of science to the public.

There were a number of very favorable comments on the Director's report, the videotape presentation, and the flow of activity since July 1 when Professor Laetsch assumed the LHS Directorship.

The next meeting will be near the middle of the Winter Quarter.

The meeting was adjourned at 4:40 p.m.



George C. Pimentel  
Chairman, Advisory  
Committee to LHS

I called Dick Wolfe in Vice President Perkins's office to suggest they change the tone of our letter in regard to the BEVALAC. I thought the letter should reflect that, although we have been trying to save the Bevatron and the BEVALAC, there is an intermediate point at which we don't have to bring in big funds to operate only the BEVALAC.

At 10:30 a.m., Dave dropped in to return his king snake, via me, to its place in our Lafayette home. His seminar seemed to go well. We talked in general about his teaching assistantship and grad work.

Ken Ericson came in to discuss the imminent visit of the Chinese scientific delegation. I had lunch with Ray Sheline, to say farewell as he departs from his sabbatical leave at LBL, and to discuss his work in general. He said he is very pleased with what he has accomplished here.

After lunch, I walked down to the campus and taught the last session this quarter of my Chem 1A section in Room F. We checked them out of their lockers after I had worked for them the problems in Monday's quiz and answered a number of questions.

We received word this afternoon that the Chinese delegation will arrive at 8:45 p.m. instead of 6:55 p.m. on Saturday, and the greeting party we had worked so hard to set up has been cancelled.

Suki and I took a hike to the water tank. At 6:45 p.m., Helen, Dianne, and I were at the TV set to watch the Apollo XVII launch from Cape Kennedy, but it was postponed at T-30 seconds until nearly 10:00 p.m., so I missed seeing it.

I attended the meeting of the EBRPD Citizens Task Force at Skyline High School in Oakland (agenda and minutes attached). Bernice May presided at the beginning of the meeting until Joe Bort arrived. Subcommittee assignments were commenced; I will be Chairman of the Trails Subcommittee and a member of the subcommittee on "Organization Structure and Administration Practice." We approved the report by Dr. Emmes's Subcommittee on Small Proposed Park Sites with respect to granting permission for a road across Cull Canyon Regional Park. Al Baum made his report for Overview. Under new business, Sue Watson moved that the Task Force ask the EBRPD not to take any irretrievable action on a master plan for Briones Regional Park at their meeting next Tuesday night, and this motion carried. This is a great victory toward "saving" Briones.

This was another cold day, with three inches of snow in Sacramento last night and this morning. President Truman is holding his own, but it is still critical.

Thursday, December 7, 1972 - Berkeley

It snowed in Novato and other Bay Area regions last night. We had a hail storm on the hill this morning.

I called Fred Blumberg to urge that the EBRPD Board postpone action on Briones Regional Park until the Master Plan is considered.



# EAST BAY REGIONAL PARK DISTRICT

11500 SKYLINE BOULEVARD/OAKLAND, CALIFORNIA 94619/TELEPHONE (415) 531-9300

BOARD OF DIRECTORS: FRED C. BLUMBERG, President; MARLIN W. HALEY, Vice President; PAUL J. BADGER, Treasurer  
PAUL E. HERBERTS, Secretary; JOHN A. MACDONALD, CLYDE R. WOOLRIDGE, DR. HOWARD L. COGSWELL □ RICHARD C. TRUDEAU, General Manager

## CITIZENS TASK FORCE MEETING NOTICE AND AGENDA

Date: Wednesday, December 6, 1972, at 7:30 p.m.

Place: Room M-4, Skyline High School, 12250 Skyline Boulevard, Oakland  
(Skyline High School is located approximately three-quarters of  
a mile past the District Office on Skyline Boulevard.)

### A G E N D A

1. Report by the Sub-committee on Small Proposed Park Sites - Dr. Emnes
2. Report on Task Force Recommendation Relative to Retaining a Management Consulting Firm to Study the District's Organization, Structure and Administrative Practices - Richard C. Trudeau
3. Announcement of Sub-committee Assignments - Chairman Bort
4. Proposed Christmas Reception for Board of Directors and Department Heads - Monday, December 18, 1972 - Brazil Room, Tilden Park
5. OVERVIEW Report - Al Baum
  - a. Development Plans for Existing Parks
  - b. Recreation Demand Projections
  - c. Recreational Activities Within Regional Park Lands
6. Staff Report on the History and Development of Existing Regional Parks (continued from November meeting) - Jerry Kent
7. Planned Task Force Field Trips
  - a. Sunol Park - Sunday, January 14, 1973
  - b. Coal Mines Area - Saturday, January 27, 1973
8. General Discussion from the Floor

## MINUTES OF CITIZENS TASK FORCE MEETING.

Skyline High School, Oakland

Wednesday - December 6, 1972

(Bernice May presided in the absence of Joe Bort.)

1. Cull Canyon Report - Dr. Emmes

In a written report dated November 20, 1972, the sub-committee on Small Proposed Park Sites presented its report and recommendations relative to the Cull Canyon/Columbia Associates problem.

The sub-committee recommended, reluctantly, that the Task Force approve the proposal for construction of the road as outlined by the developer, with the following conditions:

- a. The developer accept, through a binding written agreement, the 24 conditions requested by the Park District (accepting a cash contribution in lieu of constructing the trail as outlined in condition 18) and that the design of the bridge traversing the creek and park be aesthetically pleasing and designed to minimize its intrusion upon park activity..
- b. The sub-committee further states that it is strongly opposed to any public road going through a Regional Park and that this particular recommendation is not a popular decision and possibly against their better judgment. As such, the recommendation should not be considered a precedent-setting action as pertains to the following three items:
  - (1) The establishment of a public road through Regional Parks.
  - (2) The acceptability of a "quid-pro-quo" arrangement whereby a developer may receive road access through parklands or other items in exchange for real and valuable considerations.
  - (3) This particular recommendation should not set an example for future private development considerations where leased or licensed parklands are concerned (vis-a-vis owned lands).

Following discussion, it was moved and seconded that the Task Force accept the committee report and recommendations.

A substitute motion was moved and seconded that "The Task Force recommend to the Alameda County Board of Supervisors that it disallow the permit in order to preserve the integrity of the park open space and in keeping with ABAG population projections."

The substitute motion failed by a vote of 23 to 8.

A move to table the discussion was made and seconded. The motion passed by a vote of 17-yes, 13-no.

Minutes of Citizens Task Force Meeting - 2  
Wednesday - December 6, 1972

A motion to reconsider was made and seconded. The motion passed by a vote of 19-yes, 10-no.

It was moved and seconded to accept the committee report and recommendations.

Substitute motion was moved and seconded that "Park District oppose the project, but if the Board of Supervisors decides to approve the project, it do so with the 24 conditions and recommendations submitted by the committee." This motion failed by a vote of 10-yes, 21-no.

At this point the Task Force voted on the original motion to accept the report of the committee and its recommendations. The motion passed by a vote of 24-yes, 4-no.

(Mr. Bort now presiding.)

2. Sub-committee Assignments - Joe Bort

Mr. Bort announced chairmen and committee assignments to the following sub-committees:

- a. Criteria Sub-committee - Chairman Bernice May
- b. Non-traditional Park Functions - Chairman Susan Watson
- c. Small Proposed Park Sites - Chairman Dr. Art Emmes
- d. Planning and Management Guidelines - Chairman Florence Buehler
- e. Organization Structure and Administrative Practices - Chairman Richard Erickson
- f. Development Plans for Existing Parks - Chairman Stana Hearne
- g. Recreational Demand - Chairman Sally Germain
- h. Finances - Chairman Bill Dickinson
- i. Trails - Chairman Dr. Glenn Seaborg

Mr. Bort further indicated that one or two members from the Public Agency Advisory Committee will be added to each sub-committee to serve as advisors and resource personnel.

3. Update on Task Force Recommendation Relative to Retaining Management Consulting Firm - Joe Bort

The recommendation of the Task Force that the Board of Directors retain an outside management consulting firm to study the District's organization structure and administrative practices has been accepted by the Park District Board of Directors. The Board has appointed a committee to solicit, interview and recommend a management consulting firm to complete the study. The committee

Minutes of Citizens Task Force Meeting - 3  
 Wednesday - December 6, 1972

includes John Leavitt and Dr. Howard Cogswell from the Board of Directors, Task Force members George Cardinet and Joe Ternes, and PAAC member Jay Ver Lee.

4. Senate Bill 90

Special legislation has been accepted by the authors of Senate Bill 90, the tax limitation proposal, to exempt the Park District from the tax increase provisions of SB-90 only as they pertain to the levying of the second 5¢ after adoption of the Master Plan, as provided by AB-925.

5. Holiday Reception - Susan Watson

Susan Watson announced there will be a holiday reception for the Task Force and Park District Board of Directors, as well as department heads, on Monday, December 19, at the Brazil Building at Tilden Regional Park. Spouses are invited. Refreshments will be served.

6. OVERVIEW Report on Recreational Demand - Al Baum

Al Baum presented a covering letter and a summary on "Estimating Recreation Demand" and "Recreational Activities Within Regional Parklands," both dated December 6, 1972. The report was referred to the Recreational Demand Sub-committee, Chairman Sally Germain.

7. Thank yous were extended to Dr. Cogswell and the cities of Fremont and Newark for their assistance in making the Southern Alameda County field trip on December 2 a successful event for Task Force members.

8. Planned Field Trips

- a. Sunol Park - It was announced that there would be a field trip Saturday, January 13, to Sunol Regional Park.
- b. Coal Mines Area Field Trip scheduled for Saturday, January 27, 1973. A reprint of the charge by the Board of Directors to the Task Force was distributed in order that Task Force members could review their activities and future committee assignments in the context of their charge.

9. Report of the Sub-committee to Consider Charges of the Fremont/Newark Argus Against the EBRPD - Dr. Feeley

A written report was submitted by Dr. Feeley outlining the Argus editorial allegations and commenting on each one. Additionally, Mr. Trudeau's reply was presented together with comments.

The report concluded that "the area feels that it is quite possible the Park District fails to recognize the rapid growth of the Southern County, and the editorial was not an isolated opinion but reflects a general dissatisfaction with the Park District performance."



10. Briones Park

There has been considerable pressure developing to make certain decisions relative to Briones Regional Park prior to completion of the Master Plan. The issue was referred to the Planning and Management Guidelines Sub-committee, Chairman Florence Buehler, and the Existing Parks Sub-committee, Chairman Stana Hearne.

It was moved and seconded that the Task Force recommend to the Board of Directors that it not finalize or commit itself irrevocably to any plans for Briones without overriding considerations until after the new Master Plan has been adopted. The Task Force does not object to the modified plan proposed for Briones and to less extensive development at this site. The motion was passed unanimously.

I invited Senators John Tunney and Alan Cranston and Representatives Ron Dellums and Pete McCloskey to attend the dinner for the Chinese scientists next Thursday. All except Cranston, who may attend, will send messages in lieu of attending. I also continued my phone calls in connection with adding new members to the advisory committee for the AAAS Annual Meeting and with the fund solicitation for the 1973 Annual Meeting.

I had lunch in the cafeteria with Earl Hyde.

I attended a meeting in McMillan's office from 1:30-2:45 p.m., along with Ed Lofgren, Bill Wenzel, Earl Hyde, George Pappas, and Tom Elioff. We discussed the request from Bob Thorne to prepare for him within a week a new innovative plan for the future operation of LBL. This would include the phasing down of high energy physics connected with the Bevatron in the next three years, together with an increase in support for heavy ion research, energy and environmental research, and research in IMRD. I emphasized the value to the Lab's image to have the plan include increased support for the SuperHILAC and the value of creating a national heavy ion center from the standpoint of increasing our general acceptance and support throughout the country.

Things are nearly ready now for the visit of the Chinese scientific delegation. We estimate that Sheila and I had in the neighborhood of 250 telephone transactions over the past week in connection with this visit, the AAAS 1974 Annual Meeting advisory committee, and soliciting funds for the 1973 meeting.

Suki and I took a hike to the water tank. Steve came by for dinner on his way to spend the night with Ron and Joan. The cold weather continued with snow flurries in parts of San Francisco and other parts of the Bay Area. The condition of President Truman continues to be critical.

Friday, December 8, 1972 - Lafayette - Washington

Helen drove me to the San Francisco Airport where I boarded United Airlines Flight No. 50, which left at 9:00 a.m. and arrived at Dulles Airport at 4:15 p.m. I rode to Harrison Street with Josh Holland, who was formerly with the Radioactive Fallout Group with the AEC. His car had windshield wiper trouble, so we didn't arrive until 5:45 p.m.

Just before dinner, Sheila called to tell me that Bill Hewlett declined our invitation to serve as Chairman of the AAAS local committee for the 1974 meeting. I had dinner with Pete and Jane and spent the evening talking with them about Pete's applications to law schools.

Eugene A. Cernan, Ronald E. Evans, and Harrison H. Schmitt (a scientist-geologist) are continuing on their Apollo XVII moon flight.

Saturday, December 9, 1972 - Washington

I took a taxi to AAAS headquarters where I attended a meeting of the AAAS Board of Directors. Present were Mina Rees, presiding,

Saturday, December 9, 1972 (con't)

Phyllis Parkins, David Blackwell, Richard Bolt, William Golden, Ward Goodenough, and Bill Bevan, Dick Trumbull, and Catherine Borrás. Lewis Branscomb attended in the afternoon.

Bevan gave his Executive Officer's report. There was a discussion of whether we should allow Mary Gray to meet with the Board to express her dissatisfaction with the role of women on the new Committee on Opportunities in Science; we voted to allow her to appear (which she will do at 3:00 p.m. today), although Bevan does not want to be present during this encounter.

As five additional members of the Committee on Opportunities in Science, we chose Allan M. Cartter, Sigfredo Maestas, Harry Morrison, Jeremy Stone, and Dorothy Zinberg, with alternates Joseph Gastworth, Walter Knight, Elizabeth Scott, Conrad Snowden, Betty Vetter, and Deborah Wolfe. We chose Lew Branscomb as the Board member of the Committee on Nominations.

I had lunch with the group in the lunchroom next door to the Board Room. Dick Scribner joined us.

After lunch, we discussed measures for preventing disruptions at the Washington meeting at the end of this month. We decided to forbid television during the sessions, but permit TV recordings before and after them. We also decided to prohibit announcements at the sessions except by the chairmen of the sessions in behalf of those requesting that they be made.

At 3:00 p.m., Mary Gray met with us to criticize Bevan's treatment of women in connection with the Committee on Opportunities in Science. At 3:30 p.m., we met with four members of the Youth Council--John Burmeister, Chairman, Sydney Drayson, Walter Stewart, and Harold Raveche. We discussed possible future functions for the Council.

After this, I presided over a special session in which the Board presented to departing Chairman Mina Rees and departing Board member David Blackwell each a scroll certificate of appreciation and a silver cup and tray set.

I then attended the reception and dinner of the Board in the Tayloe and Cameron Rooms of the Cosmos Club. Present were the Board members who attended today's meeting (except Branscomb), the Caryl Haskins, the Philip Abelsons, the Richard Scribners, the William Bevans, Fran Quinn, and the Howard Greybers. Mina and I gave short remarks--I extended our best to Mina and Dave upon their departure from the Board.

The Abelsons drove me home to Harrison Street. Sheila called to tell me the arrival of the Chinese scientists went very well. They arrived at the San Francisco Airport at 3:30 p.m. The greeting party was made up of Mark Christensen, Luis Alvarez, Dr. and Mrs. Shing-shen Chern, Arthur Bienenstock, and William Massy of Stanford, and Sheila. The itinerary for their visit is attached.

VISIT OF THE SCIENTIFIC DELEGATION  
FROM THE PEOPLE'S REPUBLIC OF CHINA

IN THE SAN FRANCISCO BAY AREA  
DECEMBER 9-15, 1972

Saturday, December 9

- 3:30 p.m. Delegation arrives at San Francisco International Airport on United Airlines #121. The Delegation will be welcomed by the following representatives:  
Stanford University  
Dr. Arthur Bienenstock, Vice Provost for Academic Affairs  
Dr. William F. Massy, Vice Provost for Research  
Mr. Glenn Barber, Assistant to the President  
University of California  
Dr. Mark N. Christensen, Vice Chancellor of the Berkeley Campus  
Dr. Luis W. Alvarez, Nobel Laureate in Physics  
Dr. and Mrs. Shiing-Shen Chern  
Mrs. Sheila M. Saxby, Assistant to Glenn T. Seaborg at the Lawrence Berkeley Laboratory
- 4:30-5:00 Arrive at Stanford Court Hotel, San Francisco.
- 6:30 p.m. Private buffet dinner in the Gold Room of the hotel.

Sunday, December 10

- 9:00 a.m. Buffet brunch in Ballroom West, Stanford Court Hotel.
- 11:30 a.m. Depart by bus for afternoon tour in the country. Drive through San Francisco to south and/or north vista points at Golden Gate Bridge. Proceed to Muir Woods.
- 12:30 p.m. Arrive Muir Woods. Walking tour in Woods.
- 1:15 p.m. Depart Muir Woods on bus. Drive to the Robert Mondavi Winery, 7801 St. Helena Highway, Oakville, Napa Valley.
- 2:30-3:00 Arrive Robert Mondavi Winery. The President, Mr. Robert G. Mondavi, will conduct a private tour in the winery and vineyards. Light refreshments will be served. (1½ hours)
- 3:45-4:15 Depart by bus for return to Stanford Court Hotel, San Francisco.
- 5:45-6:15 Estimated arrival at hotel.
- 7:30 p.m. Private dinner (served), The 50s Room, Fournou's Ovens Restaurant, Stanford Court Hotel.

## Visit in the San Francisco Bay Area

2

Monday, December 11

- 7:30 a.m. Buffet breakfast in the Blue Room, Stanford Court Hotel.
- 8:30 a.m. Depart by bus for Stanford University via Route 280.
- 9:30-9:45 Arrive at Stanford Linear Accelerator Center.
- 10:00-11:30 Tour SLAC. Hosts: W.K.H. Panofsky, Director,  
and Robert Moulton.
- 11:45-1:30 Reception and luncheon, Stanford University Faculty  
Club. Host: Arthur Bienenstock.
- 1:30-2:00 Rest.
- 2:00-5:00 Group meetings with Stanford University faculty.
- Chemistry and Biochemistry: Prof. Pei Shih-chang  
Prof. Tsien Jen-yuan  
Mr. Hu Shih-chuan  
Host: Carl Djerassi  
First half of program in the Chemistry Building  
3:45 Department of Biochemistry, Stanford  
School of Medicine.
- Physics: Prof. Chang Wen-yu and Prof. Tsien Wei-chang  
Host: Robert Hofstadter  
Physics Building, Hansen Laboratories
- Computer Sciences: Prof. Pai Chieh-fu  
Mr. Li Fu-sheng  
Host: Edward A. Feigenbaum  
Department of Computer Sciences, Polya Hall  
4:00 Artificial Intelligence Project
- 5:00 p.m. Reassemble at Faculty Club
- 5:15 p.m. Depart by bus for return to hotel in San Francisco.
- 6:00-6:30 Arrive at hotel.
- 7:00 p.m. Private buffet dinner in the Gold Room, Stanford  
Court Hotel.

## Visit in the San Francisco Bay Area

3

Tuesday, December 12

- 7:30 a.m. Buffet breakfast in the Blue Room, Stanford Court Hotel.
- 8:30 a.m. Depart by bus for Stanford Industrial Park, via Route 280.
- 9:30-10:00 Arrive Stanford Industrial Park. General reception and general meeting at Varian Associates. Explanation of the Industrial Park by Carl Djerassi.
- 10:00-12:30 Group tours of Industrial Park
- Group I: Professor Pai Chieh-fu  
Professor Chang Wen-yu  
Professor Tsien Wei-chang  
Mr. Li Fu-sheng  
10:00-11:00 Tour Varian Associates  
11:15-12:15 Tour Hewlett-Packard  
12:15 Board bus
- Group II: Professor Pei Shih-chang  
Professor Tsien Jen-yuan  
Mr. Hu Shih-chuan  
10:15-11:15 Tour Zoecon Corporation  
11:30-12:30 Tour Alza Corporation  
12:30 Board bus
- 12:45-2:15 Reception and luncheon, Stanford University Faculty Club. Hosts: William Hewlett, President and Chief Executive Officer, Hewlett-Packard; and William F. Miller, Vice President and Provost, and Acting President, Stanford University.
- 2:15 p.m. Depart by bus for return to San Francisco.
- 3:15-3:30 Arrive at Stanford Court Hotel.
- 7:00 p.m. Private dinner in the Gold Room, Stanford Court Hotel.

## Visit in the San Francisco Bay Area

4

Wednesday, December 13

- 7:30 a.m. Buffet breakfast in the Blue Room, Stanford Court Hotel.
- 8:30 a.m. Glenn T. Seaborg will greet the Delegation at the hotel and accompany you on the bus to Berkeley.
- 8:45 a.m. Depart by bus for University Hall (statewide offices), University of California, in Berkeley.
- 9:30-10:00 John A. Perkins, Vice President for Administration, University of California, will greet the Delegation in the Small Regents' Suite, University Hall.  
(See separate list for other University officials who will participate.)
- 10:00 a.m. Depart by bus for the Lawrence Berkeley Laboratory.
- 10:15 a.m. Edwin M. McMillan, Director, will greet the Delegation in his office, Room 4133D, Building 50A. (Walk to the Bevatron)
- 10:30-12:00 Tour the Lawrence Berkeley Laboratory.  
  
Bevatron: Edward J. Lofgren, host, accompanied by Owen Chamberlain. Cornelius A. Tobias and Thomas F. Budinger will describe medical work.  
(Bus to SuperHILAC)  
  
SuperHILAC (Heavy Ion Linear Accelerator): Albert Ghiorso and Robert Main, hosts. (Bus to cafeteria)
- 12:00 p.m. Luncheon in the cafeteria (lower level) of the Laboratory. Hosts: Edwin M. McMillan and Glenn T. Seaborg.  
(Walk to Nuclear Chemistry Building)
- 1:30-2:00 Rest. Nuclear Chemistry Division Conference Room, Room 3377, Building 70A.
- 2:00 p.m. Depart by bus for the Lawrence Hall of Science.
- 2:15-4:30 Tour the Lawrence Hall of Science. Host: W.M. Laetsch, Director. The visit will include a rest period and light refreshments.
- 4:30 p.m. Depart by bus for hotel in San Francisco.
- Dinner and evening. Open [The Stanford Court Hotel has reserved Ballroom West for the Delegation's use.]

## Visit in the San Francisco Bay Area

5

Thursday, December 14

- 7:30 a.m. Buffet breakfast in the Blue Room, Stanford Court Hotel.
- 8:30 a.m. Glenn T. Seaborg will meet the Delegation at the hotel.
- 8:45 a.m. Depart by bus for the Berkeley Campus of the University of California.
- 9:30-10:00 Albert H. Bowker, Chancellor of the University of California at Berkeley, will greet the Delegation in the Chancellor's Conference Room, 200 California Hall. (See separate list for other Berkeley Campus officials who will participate).
- 10:00 a.m. Depart by bus for east end of the campus. Walk to adjacent buildings for group meetings.
- 10:15-12:00 Group meetings with Berkeley faculty.
- Chemistry and Biological Sciences:  
 Professor Pei Shih-chang  
 Professor Tsien Jen-yuan  
 Mr. Hu Shih-chuan  
 Mr. Hsu Chao-hsiang  
 Commons Room, first floor, Latimer Hall.  
 Glenn T. Seaborg, host.  
 Descriptions of their work will be presented by faculty from the Departments of Chemistry, Biochemistry, Molecular Biology, and Zoology.
- Physics and Engineering: Mr. Pai Chieh-fu  
 Professor Chang Wen-yu  
 Professor Tsien Wei-chang  
 Room 375 LeConte Hall.  
 Eugene D. Commins, host.  
 Descriptions of their work will be presented by faculty from the Departments of Physics, Mechanical Engineering, Electrical Engineering and Computer Sciences, and Mathematics.
- 12:00 p.m. Depart by bus for the Chancellor's residence on the campus, University House.
- 12:15-1:45 Luncheon at University House. Chancellor Albert H. Bowker, host.
- 1:45 p.m. Depart by bus for hotel in San Francisco.



## Visit in the San Francisco Bay Area

6

(Thursday, December 14)

- 2:15-2:30 Arrive at Stanford Court Hotel.
- 3:45-4:45 Time and room tentatively reserved for one-hour press conference. Ballroom East, Stanford Court Hotel.
- 4:45-6:45 Rest.
- 6:45 p.m. Depart by bus for the St. Francis Hotel, San Francisco.
- 7:00 p.m. Farewell Banquet, sponsored by the Federation of American Scientists. California Room, St. Francis Hotel. (The Delegation will be provided with a guest list during the week.)
- Return by bus to the Stanford Court Hotel.

Friday, December 15

- Luggage ready for loading before breakfast.
- 6:30 a.m. Buffet breakfast in the Blue Room, Stanford Court Hotel.
- 7:15-7:30 Depart by bus for the San Francisco International Airport.
- The Delegation will stay in the United Airlines' Aloha Room prior to boarding. Tea and juices will be available.
- 8:30 a.m. Depart San Francisco on United Airlines #22 for New York.

The American friends of the Delegation wish you a safe and comfortable journey home.

Sunday, December 10, 1972 - Washington - New York

I took a taxi to AAAS headquarters to attend the meeting of the AAAS Board of Directors. Haskins joined us; Parkins was late; Branscomb was absent; and Bevan was sick with the flu. The minutes of our two-day meeting are attached.

Trumbull presented the 1973 budget. We voted to discontinue the Youth Council, but to include young scientists on all Board committees. We decided to invite President Nixon to attend the dinner for past presidents on Thursday night, December 28. We discussed the possibility of building a new AAAS headquarters adjacent to the Brookings Institution. Golden will send to me and others the names of people in foundations that we might approach to request funds for the construction of the building. We voted \$25,000 for AAAS staff to explore feasibility of establishing Regional Centers.

We discussed the Arden House Conference and the problem of the engineers' place in AAAS. The Arden House Committee will meet after the two Committee on Council Affairs meetings on Wednesday, the 27th.

We had lunch at our places at the conference table.

I agreed to explore with Bevan the conditions under which I would accept the position of General Chairman of the 1974 San Francisco meeting. I will explore the possibility of Bill Hewlett serving with me as Co-Chairman. I suggested that there should be an industrial engineer on the Board of Directors of AAAS. It was decided that, if Moynihan resigns as a result of his appointment by President Nixon to some important position, the Board will appoint an engineer as a replacement before December 31 of this year. I committed myself to suggest a name at a breakfast Board meeting on December 27. I will check with potential candidates (including Bill Hewlett) to ascertain their willingness to accept such an appointment.

After the regular meeting, we held an executive session to discuss deficiencies in the method the budget was presented at this meeting and the need for better planning of agenda in order to allow sufficient time for discussion of items such as the budget--perhaps the executive committee should meet between meetings or perhaps there should be a budget committee. We will also choose the members of the Board Executive Committee at the December 27 meeting.

After this, I rode to National Airport in a taxi with Rieser and Bolt. I boarded an Eastern Airlines shuttle which left at 3:30 p.m., arriving at New York LaGuardia Airport at 4:15 p.m. I sat next to Dan Rather, CBS newscaster. We had an interesting conversation about the Nixon Administration's undersupport of basic research and its long-term adverse effect on our country, the unfriendly attitude of the Administration toward CBS, and current and future trends in research, such as superheavy elements and biological sciences.

I took a taxi to the Chemists Club, where I checked into Room 741. I heard on the radio that President Truman is now off the critical list.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE  
 1515 Massachusetts Avenue, N.W.  
 Washington, D. C., 20005

*Approved  
 11/12/73*

Minutes of the Meeting of the  
 Board of Directors  
 December 9 and 10, 1972

Present: Mina Rees, Chairman, David Blackwell, Richard H. Bolt, Lewis M. Branscomb (on December 9), William T. Golden, Ward H. Goodenough, Caryl P. Haskins (on December 10), Phyllis V. Parkins, Leonard M. Rieser, Glenn T. Seaborg, William Bevan; from the staff, Richard Scribner (on December 9) and Richard Trumbull; by invitation, Mary Gray, David Burmaster, William Drayton, Harold J. Raveche, and Walter W. Stewart

Absent: Barry Commoner and Daniel P. Moynihan

MINUTES

1. Agenda Item 1. Executive Officer's Report. The Executive Officer reported that arrangements are being made with MISCO, a subsidiary of McCall Printing Company, to convert the circulation and reader services to computer. It is hoped that the new system will be in effect for the March 2nd issue of Science.

He called attention to the program booklet for the Washington meeting, and noted that it is printed on recycled paper. Contributions to the meeting now total \$13,300, with an additional \$10,000 pledged by the Smithsonian Institution. Advance registrations as of December 8th number 2,555, exceeding the totals for the Chicago and Philadelphia meetings on the same date but falling some 489 short of that for the Boston meeting.

Program planning for the Mexico City meeting is in an advanced stage. The ten central themes will be supported by 31 technical symposia, and 12 distinguished lectures will be presented. The Mexicans are doing a very impressive job, and the pre-meeting work will soon become a matter mainly of handling the administrative details associated with arrangements. Letters to all the member corporations of the Council of the Americas have been or will soon be mailed. In the light of the slow corporate response, Drs. Seaborg and Bevan are considering proposing an editorial in Science directed toward U.S. corporations.

A letter dated November 17, 1972, from Luis Quintanilla to Maurice Mandelbaum, which was distributed at the meeting, expressed regret that the "normal situation" of Professors De Gortari and Molina Flores had not been made known earlier to members of the American Philosophical Association. As evidence of the striking change with reference to

- 2 -

intellectuals which has taken place in Mexico since President Echeverria took office, Dr. Quintanilla pointed to the President's attendance at a banquet of 1,600 guests honoring the liberal economist, Jesus Silva Herzog. Professor De Gortari also attended the banquet.

The first draft of the power study being prepared by a subcommittee of the Committee on Environmental Alterations was completed in September, has received a careful and detailed review by the Committee, and is now being revised along lines directed by the Committee. The final report should be available in time for review by the Board in advance of its March meeting.

Earl Scherago, director of advertising, has been given the required two years' advance notice that the Association does not intend to renew his present contract, certain terms of which are unsatisfactory from the Association's point of view. It is expected that contract negotiations will be begun shortly after January 1st.

Two additions to the staff were announced: Graham Chedd, Department of Communications, and William Engelman, Director of Personnel Services. Drs. Rees and Bevan have interviewed the six finalists for the position of Director of the Office of Opportunities in Science and expect to extend an invitation on December 11. Recruiting for the position of Controller must begin again, since the person selected for appointment decided to stay with his present employer.

2. Agenda Item 2. Minutes. Minutes of the meeting of October 21-22 were approved with the following corrections:

Minute 1, Executive Officer's Report: On page 2, second paragraph under (d), line 3, change "\$5,000" to "\$10,000." On page 2, (e), line 7, delete "(with all words given equal prominence)."

Minute 8, Scientific Manpower Commission: At the top of page 6, subparagraph (d), third line, change "\$35,000" to "\$25,000."

Minute 13, Appointment of Committee Members: On page 9, revise the material under "Environmental Alterations" as follows:

William M. Capron (reappointment)  
Thomas F. Malone  
Marc J. Roberts  
Sidney R. Galler

The Board agreed to increase the Committee's membership by one. To fill the remaining position, the Executive Officer was requested to choose between Donald W. Aitken and Ruth Patrick.

On page 10, under "Youth Council representatives to other committees," Virginia Walbot should be assigned to the Committee on Opportunities in Science rather than to the Committee on Minorities in Science, which has

been terminated.

Minute 17, New Business [page 13 (d)]: In line 3, change "common stock" to "mutual funds." In line 4, insert "investment" before "counsel."

3. Agenda Item 3. Interim Board Actions.

(a) The Board approved the appointment of Dr. C. Towner French as Secretary of the Section on Engineering (M) for 1973.

(b) The Board voted to merge its October and December 1973 meetings into one three-day meeting on November 30, December 1, and December 2.

4. Agenda Item 4. Information Items. The Board was informed of the following matters:

(a) New Grants. Since the October meeting, the following grants have been received:

\$5,000 from the Population Council in partial support of a symposium on "The Problems of Population" at the Mexico City Meeting.

\$250 from the Squibb Institute to support the symposium on "Genetics, Man and Society" arranged by the Youth Council and the Yale Task Force.

\$2,000 from the Commonwealth Fund in support of TV broadcasts, Washington Meeting.

\$1,700 from various contributors to the Local Committee, Washington Meeting, for general purposes.

(b) Winners of AAAS-Westinghouse Science Writing Awards.

In newspapers with more than 100,000 daily circulation: Walter Sullivan for an article entitled "The Einstein Papers" in the New York Times, March 27-29, 1972. This is the third time Mr. Sullivan has won the award.

In newspapers with less than 100,000 daily circulation: Dennis L. Meredith for a series on nuclear power plant siting in the Phoenix-Times Newspapers, Rhode Island, April-May, 1972.

In magazines: Eugene Kinkead for an article on "Cold Light" in The New Yorker, September 23, 1972.

(c) Chinese Delegation. An invitation has been extended to the head of the Chinese delegation visiting Washington to send two representatives to the 1972 Annual Meeting.

(d) Committee on Scientific Freedom and Responsibility. The Board had earlier requested that the Committee submit its final report at the October 21-22 meeting. The Committee regrets that the report will not be ready for presentation before the March 1973 meeting.

(e) Scientific Manpower Commission. A recommendation that Council approve designating the Scientific Manpower Commission as a Participating Organization was mailed on November 6. The vote, as of November 29, was 212 for and 15 against.

5. Agenda Item 5. Second Arden House Conference. Dr. Rieser reported that he and Dr. Bevan had met in November to make initial plans for a series of editorials to be published in Science at regular intervals and for an article to be published in the spring. He called attention to the special program arranged as part of the Arden House hearing on December 28 and reminded the Board that participants for the Conference should be selected at its March meeting. In advance of that meeting, he will call a meeting of the Arden House Planning Committee, consisting of Drs. Bevan, Bolt, Branscomb, Commoner, Goodenough, Rees, Rieser, and Seaborg. Members of the Board recommended that both the article Drs. Rieser and Bevan plan to write and the Conference itself emphasize the Association's concern that engineers become more active in AAAS affairs.
6. Agenda Item 6. Election of New Section Chairmen and Chairmen-Elect. The Board VOTED to elect Roy Lovvorn as Chairman of Section O (Agriculture) and Terah L. Smiley as Chairman-Elect of Section E (Geology and Geography).
7. Agenda Item 7, Executive Committee of the Board. The Board agreed to select the three new members of the Executive Committee (in addition to the Chairman of the Board, the President, and the Executive Officer) at its meeting on December 27 or, if the results of the 1972 election are not known at that time, by mail ballot early in 1973.
8. Agenda Item 8. Committee on Nominations. Lewis Branscomb was selected as the Board-appointed representative on the Committee on Nominations.
9. Agenda Item 9. Youth Council. David Burmaster, William Drayton, Harold J. Raveche, and Walter W. Stewart attended the meeting on Saturday to present plans and recommendations formulated by the Goals Committee of the Youth Council. They reported that the Committee had been established to determine what the Youth Council's function is or might be, to diagnose the causes of the frustration experienced by Youth Council members, and to propose solutions. The Committee asked the Board to answer the fundamental question of whether or not the Youth Council could be assigned functions of sufficient viability and importance to justify its continuation and, if so, whether or not the Youth Council could count on the resources, trust, and autonomy it deems necessary for the performance of such functions.

- 5 -

Possible functions cited by the Committee were:

1. Develop symposia and other activities. (It was the view of the Committee that, while the Youth Council had demonstrated its ability to develop symposia, such a function alone would not warrant its continuation.)

2. Launch new programs, e.g., the internship or regional centers program. (While the Youth Council is eager to serve this function, the Committee is under the impression that the Central Office regards it to be a responsibility solely of the staff.)

3. Review existing AAAS programs to challenge assumptions and suggest changes, e.g., review of Science magazine and governance procedures. The Committee pointed out that a study plan of each project would be presented to the Board for approval in advance, and that Board confidence and support would be essential for success. (The Committee recognized that this is a sensitive area and that the Board might not regard the Youth Council as the best vehicle for such a function.)

4. Policy. (The Committee did not regard this function as appropriate for the Youth Council.)

5. As a result of functions 1 through 4, the "apprenticeship" education of Youth Council members.

6. Issue studies.

Of these six possibilities, the Committee felt that only the functions of launching new programs and conducting reviews are viable, and recommended that unless the Board wished to assign clear responsibility for one or both, it dissolve the Youth Council. The Committee suggested that in the event the Board should decide on dissolution, it could continue to test and train young persons by selective appointment to committees.

It was the Committee's position that if the Youth Council is continued, it must be given a clear charge and full responsibility to execute the charge. In addition, it must be able to count on the resources required for a viable program--adequate budget and staff--and on autonomy to fulfill its responsibilities. For 1973, the Youth Council proposed that it be granted a budget of \$18,000 and be allowed to have its own clerical staff and project assistants to work under the guidance of Youth Council members, with AAAS staff being used only for what it termed "high-level work," e.g., fund raising. The Committee emphasized that the budget was merely an indication of Youth Council interests and that it was subject to change, depending on which of the proposed activities the Board might approve.

Finally, the Committee requested that the Board (a) endorse its holding a luncheon on December 29 and inviting as guests the participants in the symposium on Genetics, Man, and Society (sponsored by the Youth Council)

- 6 -

and members of the Youth Council, Board, and press, a total of some 75 persons at a cost of some \$500; (b) authorize payment to Ron Williams for services performed at the request of the Youth Council without prior consultation with the AAAS Central Office.

On Sunday, the Board discussed at length the Association's experience of the Youth Council since its establishment in June 1970 and expressed its appreciation for the presentation from the Goals Committee. On the basis of this discussion and consistent with one of several alternatives presented by the Goals Committee, the Board elected to terminate the Youth Council, effective January 14, 1973, and to initiate more direct and effective mechanisms for involving young scientists in the affairs of the Association. Specifically, it made the following commitments:

(a) To achieve a significant representation of young scientists on all committees established by the Board, including such task forces as that concerned with regional centers. (Priority for membership will go to members of the present Youth Council.)

(b) To request that the Council, through the Committee on Council Affairs, make a similar commitment.

(c) To assemble young scientists from the committees from time to time, as appropriate, to review Association programs and policies and to explore general concerns of young scientists, such as opportunities for career development.

The Board agreed that it did not wish to embarrass the Youth Council by withholding approval of the proposed luncheon. On the other hand, it felt that to approve a luncheon for 75 people, including a number of press representatives, would violate the Association's long tradition of entertaining only sparingly, selectively, and unostentatiously. Accordingly, it authorized a luncheon restricted to symposium participants and Youth Council members.

Payment to Ron Williams for any past services for which he had not received compensation was also authorized. (In the light of the Board's decision to terminate the Council, it was assumed that any need for Mr. Williams' services would not extend beyond December 31, 1972.)

10. Agenda Item 10. Science Advertising Policy. As requested by the Board at its October meeting, a statement of the current advertising practices of Science was enclosed with the agenda. Dr. Rees reported that she planned in the immediate future to appoint a small committee to consider those practices and thus would make the statement available to it.

11. Agenda Item 11. Committee on Opportunities in Science. The Board selected the following persons to complete the membership of the new Committee on Opportunities in Science:



Allan M. Cartter  
Sigfredo Maestas  
Harry Morrison  
Jeremy Stone  
Dorothy Zinberg

As alternates, they chose Joseph Gastwirth, Walter Knight, Elizabeth Scott, Conrad Snowden, and Deborah Wolfe.

12. Agenda Item 12. Committee on Women in Science. A letter to the Board from Mary Gray, a member of the Ad Hoc Committee on Women in Science, was distributed at the meeting. Dr. Gray wrote to protest the Board's action in terminating the ad hoc committee and to request an audience. At the Board's invitation she attended the meeting on Saturday afternoon. She expressed the view that in dissolving the committee and establishing an Office of Opportunities in Science without consulting the committee on how the office should be organized and what its tasks should be, the Board was continuing its policy of neglect of persons outside the establishment--women, members of minority groups, and others. Furthermore, she felt that the position of Director of the new office should have been widely advertised and that the committee should have been invited to screen and interview the candidates.

As another example of the Association's failure to consult the ad hoc committee, she cited a recent mailing from the Recruitment Office to members of women's societies, inviting them to join AAAS but making no reference to the role of women in the Association. She deplored the general lack of responsiveness of AAAS to its membership and stated her specific objection to the establishment of the four advisory panels to the Office of Opportunities, all feeding into one Committee on Opportunities in Science. She feared that the panels would be in competition with one another and that the panel on women, representing the largest group, would be outvoted by the three minority group panels.

The Board took no action.

13. Agenda Item 13. Conduct of the Washington Meeting. Richard Scribner distributed copies of an editorial by Mina Rees, to be published in the 15 December issue of Science, which makes clear the meeting philosophy regarding freedom to dissent versus freedom to disrupt. The editorial will be sent to chairmen of sessions together with instructions on handling problems that may arise at meetings they chair.

The Meetings Office has vigorously enforced the Board's policy that hotel space will be made available by AAAS only to affiliated societies and to groups participating formally in the meeting.

Each hotel will have a floor manager assigned by the Meetings Director to assist chairmen if trouble should arise. Each session will have an aide who can summon help, if needed, and many sessions will have guards. Bullhorns and megaphones will not be permitted in meeting sessions.

In the event of destruction of property or physical assault beyond the control of the guards, city police will be called in and the Association will be prepared to press charges against the disrupters.

TV personnel will be permitted to film only those sessions for which they have secured advance permission from the Meetings Director.

Instructions to chairmen advise that they handle persons who wish to make brief announcements with a mixture of firmness and flexibility. The Board pointed out that it preferred a policy of requiring that persons wishing to make announcements submit them to the chairman in written form for his presentation to the session participants.

14. Agenda Item 14. Resolution on Child Care at Annual Meetings. The Board reviewed a resolution from Dr. Peddrick Weis and Dr. Judith S. Weis, which had been referred to it by the Committee on Council Affairs, proposing that "the AAAS at all future meetings arrange for child care facilities to accommodate children of those attending the meeting." It was agreed that the staff would investigate the feasibility of arranging for such child-care facilities at the San Francisco meeting, either in a hotel or in a nearby day-care center, taking into consideration questions of cost, legal liability, and the health and welfare of children who would be cared for in such facilities.

15. Agenda Item 15. General Chairman, San Francisco Meeting. The Executive Officer reported that three persons had been nominated for the general chairmanship of the San Francisco meeting: Robley Williams of the Virus Laboratory, University of California, Berkeley; William R. Hewlett, President, Hewlett-Packard Company; and Glenn T. Seaborg. Upon being requested by the Board to accept the position, Dr. Seaborg expressed willingness to serve but reservations about taking on the fund-raising and other responsibilities involved. When the Executive Officer told him that it is customary to provide the General Chairman with an assistant, Dr. Seaborg agreed to accept the appointment, but suggested that William Hewlett be invited to serve as co-chairman. The Board agreed, and Dr. Seaborg offered to extend the invitation by telephone.

16. Agenda Item 16. 1973 Budget. A draft of the 1973 budget prepared by the staff was distributed together with a statement of the assumptions on which it was based. The Board VOTED to increase the proposed section allocation from \$10,000 to \$24,500, on the assumption that under the new bylaws, the sections are likely to be more active and perhaps to hold meetings. The Board also authorized the addition of \$25,000 to the budget for a feasibility study of regional centers [see Minute 18 (c)]. The Executive Officer was requested to revise the format of the budget, giving comparative data for 1972; to provide information on the costs and income associated with Science; to determine further why grant overhead does not exceed 10% of total costs; and to provide information concerning the costs associated with the planned computer conversion. (The information requested was subsequently provided in a memorandum dated December 18.)

- 9 -

The Treasurer reported that the Association's total securities portfolio amounts to \$4-1/4 million, one half in bonds and one half in mutual funds. The Association's net worth is \$3,750,000, which includes real estate with a book value of about \$1 million. The difference between the portfolio and net worth figures lies in prepaid membership dues and subscription obligations. He pointed out that the budgeting procedures over the years had allowed the inclusion of only part of investment income, which he estimated would average 5 percent per year. He recommended that the principle of total return in budget making, now used by many universities and other nonprofit organizations, be adopted as AAAS practice. The Board agreed.

A revised budget based on these considerations will be reviewed by the Board at a special breakfast meeting in the Rees-Bevan suite (C-540) in the Sheraton Park Hotel at 8:00 A.M. on December 27.

17. Agenda Item 17. Affiliation of Engineering Societies. The Executive Officer reported that the Committee on Council Affairs, at its meeting on November 14, had expressed concern over the disaffiliation of several societies, particularly the American Society for Testing and Materials, and had asked that the Board consider how to develop a closer relationship with engineering societies.

The observation was made that Council's action last December in voting down motions to amend the constitution by adding the words "and Technology" to the Association's title and the words "and engineers" and "and technology" to the statement of objectives is known to have alienated representatives of engineering societies.

The Board agreed that the problem of capturing and holding the interest of engineers is a difficult one that must be solved if the Association means to take seriously the Bolt resolution concerning expansion of AAAS membership, for the some million engineers in the U.S. constitute the most logical source of new members. The importance of engineers in putting science to work for human benefit was also noted. However, at the same time, it was pointed out that the principal benefit of AAAS membership is a subscription to Science, the present content of which appears not to be very attractive to engineers; they are relatively easy to recruit as members, but drop out in large numbers each year.

Two suggestions were made: (a) that a committee under the chairmanship of Dr. Bolt be established to explore the problem in preparation for the Second Arden House Conference; (b) that Council be informed that the relationship of science and engineering will be covered in depth at the Conference. No formal action was taken.

18. Agenda Item 18. New Business.

(a) Resolutions of appreciation. The Board presented the following resolutions of appreciation to Drs. Rees and Blackwell, who will retire from the Board in January:

- 10 -

To Mina Rees

WHEREAS Mina Rees has completed her year as Chairman of the Board after having served the AAAS devotedly and effectively for thirteen years as Director, President-Elect, and President, and

WHEREAS she was the first woman to be elected to the presidency of AAAS, and

WHEREAS she has had a distinguished career in mathematics, higher education, and government, and

WHEREAS she played a major role in the selection of a new Executive Officer and in the ensuing expansion of the functions and staff of the AAAS, and

WHEREAS she has furthered the opportunities in science for women and minorities while defending the rights of man, and

WHEREAS she has won the respect of the Board and staff for her un-failing fairness, persistence, imperturbability, wit, wisdom, and winsomeness,

THEREFORE BE IT RESOLVED that we, the Board, express our gratitude and affection for Mina Rees, hope she will continue to work with us in many ways, and wish her well where'er she goes.

To David Blackwell

WHEREAS David Blackwell has served for three years as a member of the Board of Directors of the American Association for the Advancement of Science, and

WHEREAS he has in that capacity played a key role as a member of the Committee on Governance in the important task of drafting a new Constitution and Bylaws of the Association, and

WHEREAS he has served with diligence on a number of important committees of the Association, and

WHEREAS he has concurrently continued to be a devoted and creative teacher of both undergraduate and graduate students at the University of California, Berkeley, and

WHEREAS he has continued his high level of contributions to his professional field of statistics, and

WHEREAS he has served with distinction on the University's Academic Senate Policy Committee and other groups committed to the advancement of science and education,

- 11 -

BE IT RESOLVED that the Board of Directors of the American Association for the Advancement of Science extend to David Blackwell its great appreciation for his distinctive contributions to the life of the Association, its expression of admiration for his outstanding record as a teacher and researcher, and its wishes for his future continuing success.

(b) Future Meetings. The Board agreed to hold a special breakfast meeting at 8:00 A.M. on December 27 in Suite C-540 of the Sheraton Park Hotel to review the revised budget and take up one or two other matters. The schedule of meetings for 1973 is as follows:

March 17-18, Washington, D. C.  
June 22, Mexico City  
November 30, December 1-2, Washington, D. C.

(c) Regional Centers. Dr. Bolt summarized the 1972 progress report of the Ad Hoc Committee on Regional Centers, which was distributed at the meeting, and informed the Board that the Committee feels it has carried the study as far as it effectively can and that the appropriate next step is a policy decision on the part of the Board--specifically, whether or not the Board is prepared either to authorize one or more of the committees interested in regional centers to launch its own program or to develop a single, coordinated regional program involving an annual commitment of some \$100,000. The Board agreed that a single, coordinated program would be preferable to one or more programs dispersed among its several committees, but stated that it was not prepared at this point to commit itself to a long-range program. Instead, the Board VOTED to authorize an addition of \$25,000 to the 1973 budget to support a feasibility study of regional centers to be conducted or commissioned by the staff. The desirability of having the study completed in advance of the Second Arden House Conference was stressed.

(d) Invitation to the President. In a memorandum of December 1 to the Executive Officer, which was distributed at the meeting, Howard Greyber suggested that President Nixon be invited to attend the Washington Meeting. The Board was informed that an invitation to the General Chairman's Reception on December 26 had already been extended to the President. The Board thus agreed that it would also be appropriate to invite him to the Past Presidents' Dinner on December 28, and that arrangements for a telegram of greetings from the President to the Association should be made through Edward David's office.

(e) Attendance of General Chairman at the Presidential Address. The Board was informed that Dr. Ripley would not be in Washington on December 28 to present the traditional greetings of the General Chairman to the Association on the occasion of the Presidential Address. The Board requested that he be urged to return to the city for that Address.

(f) Building Plans. The Board received a memorandum from the Executive Officer posing several questions that had arisen in discussions with the Brookings Institution concerning their property at 18th Street and

Massachusetts Avenue:

1. Would AAAS be willing to grant Brookings a 25-year option on the property? The Board replied no.
2. Would AAAS be willing to grant Brookings the privilege of first consideration for repurchase in the event that AAAS wishes to sell the property at any other time? The Board replied yes.
3. How does the Board feel about the concept of a National Science Center? The Board favored such a concept.
4. Would the Board be willing to accept any unpleasantness resulting from a decision to demolish the present Mellon House? Mr. Golden reported the Finance Committee's view that any unpleasantness would be minor and that this question should not be an element in the Board's decision.
5. How much of the Association's liquid reserves is the Board willing to transform into real estate? The Board discussed the possibility of securing contributions toward the cost of the building, and Mr. Golden offered to send a list of appropriate foundations to the Executive Officer for distribution to the Board.

Dr. Rees asked whether the Board would be willing to spend up to \$5 million (the amount estimated by Mr. Golden for cost of land, demolishing the old building, and constructing a new one) and to share certain facilities with Brookings. It was the consensus of the Board that it would consider a proposal from Brookings if the terms were sufficiently attractive, but that it did not wish to make a decision until it had considered other alternatives, particularly the possibility of a National Science Center.

(g) Dues Income. Dr. Blackwell suggested two ways to increase the Association's income from dues: (1) Use a sliding dues scale for members, depending upon their salaries; he pointed out that the American Association of University Professors and the American Mathematical Society use this system. (2) Increase the dues for AAAS Fellows. The Executive Officer was requested to put the matter on the agenda for the March meeting.

William Bevan

December 20, 1972

Monday, December 11, 1972 - New York - Washington

I had breakfast in the Chemists Club dining area, then spent the morning in my room working on notes for my keynote address tomorrow, "Energy Conversion I--Nuclear" at the Tuesday morning session of the IEEE Conference on Research for the Electric Power Industry at the Sheraton Park Hotel in Washington.

I had lunch in the Club main dining room, sitting at one of the general assembly tables with Charles E. Griffith, President of the Club, Irving Hochstadter, a member of the club since 1907, and others. Charles told me about the on-going negotiations to merge with the Engineers Club in order to stave off bankruptcy; he said some Club board members are unrealistically opposing still, so it is being submitted to a vote of the entire membership.

After lunch, I took a taxi to the building of Ruder and Finn for an interview with John R. Bunting, Jr., Chairman and Chief Executive Officer of the First Pennsylvania Corporation, on corporate responsibility, to appear in the Corporation's Annual Report. I was interviewed by Bunting, assisted by Nathaniel Bowditch, Executive Vice President, and recorded on tape by Jerry Kornbluth. I also met and talked to Marvin Frankel and Suzanne Pederson, both with Ruder and Finn, the public relations firm that represents the First Pennsylvania Corporation. The questions were in the general area of the energy crisis, past, present and future corporate responsibility, the social responsibility of scientists, public attitudes toward nuclear power, etc. They have already interviewed, for the same purpose, Ralph Nader, John D. Rockefeller, III, William May (American Can Company), and Senator John Moss; they plan to interview David Eastburn and Barbara Franklin. They will send me the complete transcript and edited transcript for my checking.

After this, I walked to the nearby General Motors Building to attend a meeting of the Board of Directors of the Dreyfus Third Century Fund. Present were Board members Howard Stein (Chairman), David Burke, Robert Goheen, George Harrar, Sol Linowitz, and Lucy Benson, plus Monte Gordon (Vice President, Dreyfus Corporation, for Financial Research), David Bronheim (Vice President of the Fund), Michael Glass (Secretary), William Berkowitz (Treasurer), Margaret Evans, and, for the latter part of the meetings, a couple of staff analysts. We followed the agenda (copy attached, with minutes). We had dinner at the conference table, continuing the meeting as we ate.

I left the meeting at 7:00 p.m., when it was nearly finished, to meet, at Sol Linowitz's suggestion, Paul J. Lochak, a representative of Electricite de France (EDF). He wanted to see me, at the suggestion of Alexis C. Coudert and Olivier Giscard d'Estaing (of France), to discuss my possibly associating myself with EDF as a consultant on broad policy issues associated with France's turn toward pressurized, water-cooled (Westinghouse type) reactors. They are having difficulties getting any policy advice from the USAEC. The arrangement with me might involve facilitating contact with U.S. scientists for advice on this and other problems. Lochak will visit me at LBL in January to pursue this further after he has defined the arrangement better with EDF.

Dreyfus Third Century Fund

Agenda  
Board Meeting -- December 11, 1972

- 1. Approval of the Minutes
- 2. Fund Sales Report Mr. Berkowitz
- 3. Form N-1R
- 4. Reorganization of Manager's Research Department Mr. Bronheim
- 5. Consideration of securities eligible for investment Mr. Bronheim
  - a. Review of Banking and Book Publishing and Multi-Market Companies
  - b. Special Consideration Companies
- 6. Review of Fund portfolio Mr. Stein
- 7. General Business Discussion

*Write Keady, V.P. Dreyfus Corp. for Financial Research*



DRAFT

THE DREYFUS THIRD CENTURY FUND, INC.  
MINUTES OF REGULAR MEETING OF BOARD OF DIRECTORS

December 11, 1972

The seventh meeting of the Board of Directors of The Dreyfus Third Century Fund, Inc., a Delaware Corporation, was held on the 11th day of December, 1972, at four o'clock in the afternoon at 767 Fifth Avenue, Borough of Manhattan, City and State of New York, pursuant to notice given in accordance with the By-Laws. Present were the following Directors:

Mrs. Lucy Wilson Benson  
 Mr. David W. Burke  
 Dr. Robert F. Goheen  
 Dr. J. George Harrar

Hon. Sol M. Linowitz  
 Dr. Glenn T. Seaborg  
 Mr. Howard Stein

constituting a quorum of the Board. Also present at the request of the Board were Mr. David Bronheim, Vice President of the Corporation; Michael A. Glass, Esq., Secretary of the Corporation; Mr. Monte J. Gordon, Vice President - Research of the Manager, The Dreyfus Corporation; and Russell J. Guglielmino, Esq., of the firm of Reavis & McGrath, counsel to the Corporation *and William Berlowitz.*

Mr. Stein acted as Chairman of the Meeting, and Mr. Glass served as Secretary of the Meeting to record the minutes thereof.

Mr. Glass presented for approval the minutes of the previous meeting held October 20, 1972. Each member of the Board having received a copy of these minutes, a reading was dispensed with and, after discussion, they were approved upon motion duly made, seconded and unanimously carried.

-2-

Mr. Berkowitz reported to the Board the sales and redemptions of the shares of the Corporation through November 30, 1972. November was the first month in the Corporation's operating history in which redemptions exceeded sales, a situation currently typical in the mutual fund industry.

Mr. Glass reviewed with the Board the filing of Securities and Exchange Commission Form N-1R, the Annual Report of Management Investment Companies, which had been circulated for the approval of the Directors prior to its filing with the Commission. After Mr. Glass reviewed in detail the sections of the Report on the management fee and offset arrangement, information on portfolio turnover rate and securities transactions, statistics on attendance at Board meetings as well as other data, upon motion duly made, seconded, and unanimously carried, it was

RESOLVED that the filing of Form N-1R by this Corporation with the Securities and Exchange Commission on November 29, 1972 is hereby confirmed and ratified in all respects.

Mr. Bronheim reported to the Board on the reorganization of the investment research function carried out by the Manager for the Corporation and introduced Mr. Monte J. Gordon, Vice President-Research of the Manager. Mr. Bronheim said that the special research staff had largely completed the initial phase of building a list of sufficient length from which the portfolio manager could make investment decisions. The greater part of the effort

-3-

of carrying out the Corporation's special considerations has shifted from gathering statistics on new companies to re-evaluating and updating the statistics on the companies already interviewed. The Corporation's special research has, therefore, been integrated with traditional portfolio research and placed under the supervision of Mr. Gordon. The special research staff has become part of the Manager's Research Department with all members of the Department contributing input for the benefit of the Corporation's research effort. Thus, there will be fewer persons working exclusively on special research but the number of those working on behalf of the Corporation will be larger, and an extra effort will be made by everyone in the Research Department to build the list of "technology" companies.

Mr. Bronheim then explained the review and updating process. He discussed in general the performance of the companies examined in the four areas of special concern and the degree which improvement in the performance has been noticeable over the past year.

A general discussion followed on the identity and composition of the Corporation's shareholders and the size their holdings. Methods for publicizing more widely the Corporation's special aspects were also discussed.

The Board then passed to a consideration of the industry analyses for the selection of the securities of "ranked companies." At this point,

-4-

members of the special research staff joined the meeting. The first group of companies considered by the Board were in industries for which statistics for the annual review were ready.

<u>Industries Reviewed</u>	<u>Areas Determined Relevant</u>	<u>Cut-Off Line*</u>	
		<u>Former</u>	<u>Rescored</u>
Banks	Equal Employment	73.9% (3/20/72)	69.23%

[Effect of Review: two banks qualify for the first time and a corporation hitherto qualified (now at 61.8%) will be informed they have fallen below the cut-off line.]

Multi-market	Equal Employment (weighted twice) Occupational Health & Safety	56.9% (7/19/72)	56.9%
--------------	---	--------------------	-------

[Effect of Review: one company not previously examined now qualifies.]

Publishing--Books	Equal Employment	54.29% (7/19/72)	56.20%
-------------------	------------------	---------------------	--------

[Effect of Review: one company has moved above the cut-off line which before scored below.]

<u>Industries Reconsidered</u>	<u>Areas Determined Relevant</u>	<u>Cut-Off Line</u>
Insurance	Equal Employment	Remain at 50.7%

(for the purpose of adding statistics of another company)

\*expressed as a percentage derived by dividing a base score by the raw score received by the company.

-5-

The Board then passed to consideration of a "technology company" working in the area of the protection and improvement of the environment. The company presented is developing technology for using geothermal steam for generating power. The securities of this company were unanimously approved for investment by the Corporation.

The Secretary presented the Directors for their approval a draft letter to be sent to companies the securities of which, after the annual review, have been declared eligible for investment by the Corporation.

A general business discussion ensued, and the Chairman discussed in particular the movement of investment funds among the equity and bond markets, savings banks, and mutual funds. The Chairman also reviewed with the Board the portfolio of the Corporation, with particular attention to the largest holdings and to those investments which had appreciated or depreciated the greatest in value. Portfolio strategy was discussed in relation to general economic and market conditions.

There being no further discussion, a motion for adjournment was duly made, seconded, and unanimously carried. The meeting was adjourned at eight o'clock.

I boarded the Eastern Airlines shuttle which left at 8:15 p.m., arriving at National Airport at 9:00 p.m. I took a taxi to Harrison Street, where I talked a while to Pete and Jane.

Sheila called to bring me up-to-date on the visit of the Chinese scientists. Yesterday afternoon, they were taken on a trip to Muir Woods--stopping at both ends of the Golden Gate Bridge for picture-taking--and to the Robert Mondavi Winery in the Napa Valley, where they had a tour, wine-tasting, and box lunches. Sheila said that, although it was cold, the weather was crystal clear, and the day was a relaxing, enjoyable one for the delegation. They visited at Stanford University today and will go to Stanford Industrial Park tomorrow. Sheila extended my particular greetings to Chang Wen-yu, Deputy Head of the Institute of Atomic Energy in the People's Republic of China, who, she said, speaks excellent English.

When the delegation members arrived in their individual hotel rooms on Saturday, each found a personalized under-arm briefcase (provided for us by the President's Office) which contained a letter of greeting from President Hitch, my welcoming letter as coordinating host for their visit (copies attached), together with the itinerary, a booklet of biographical information which we prepared in our office on each of the Berkeley faculty and research staff whom the delegation would meet at Berkeley, and literature about the University, the Berkeley campus, the Lawrence Berkeley Laboratory, the Lawrence Hall of Science, and the Center for Chinese Studies.

Tuesday, December 12, 1972 - Washington - Lafayette

Fred Warren came by and I rode with him to the Sheraton Park Hotel. Here, the panelists for this morning's program on "Energy Conversion I--Nuclear" had breakfast with us in the dining room. Present were William Drummond, Melvin Gottlieb, Chauncey Starr, Wallace Behnke, and William Gould.

At 9:00 a.m., we assembled in the Park Ballroom where we participated in the program before an audience of about 200. Warren presided and introduced the speakers. I gave the keynote address, about 70 minutes long, illustrated with 39 slides. Following this, the other five spoke in turn, about 15 minutes each. This was followed by questions from the audience. I stated, in answer to questions, that the U.S. needs a resource policy as well as an energy policy and that I favored increased emphasis on the High Temperature Gas-Cooled Reactor (HTGR). Starr disputed my contention that the U.S. should have an energy policy, but several of the others agreed with me. I gave my slides and a corrected manuscript to Howard Barnes for reproduction in the Proceedings of the meeting.

At 12:30 p.m., I went with Warren, Howard Barnes, Milton Byrne, and others to the Assembly Room for a luncheon with representatives of the press (mostly technical). After eating, I answered a few questions on the safety of nuclear power, need for research on fossil fuels, need for scientific advice to Congress, etc.

I was scheduled to ride to Dulles Airport with Milton Byrne (a friend of my cousin Louise Howser Price) but, since his car wouldn't

## UNIVERSITY OF CALIFORNIA

BERKELEY • DAVIS • IRVINE • LOS ANGELES • RIVERSIDE • SAN DIEGO • SAN FRANCISCO



SANTA BARBARA • SANTA CRUZ

CHARLES J. HITCH  
*President of the University*

BERKELEY, CALIFORNIA 94720

December 8, 1972

Honorable Member  
Delegation of Scientists  
The People's Republic of China

On behalf of our nine campuses, I welcome you to the University of California. Whatever eminence we may have achieved in the world of learning is enhanced and embellished by your visit. My only regret is that I am unable to be present to greet you.

May this event be the harbinger of more fruitful cooperation between our countries and our universities, and may you enjoy your visit in California and the United States.

All good wishes,

A handwritten signature in cursive script, appearing to read "C. Hitch".  
Charles J. Hitch



Sample of individual letter to each Chinese member of the Delegation.

LAWRENCE BERKELEY LABORATORY

UNIVERSITY OF CALIFORNIA

BERKELEY, CALIFORNIA 94720 □ TEL. (415) 843-2740

December 7, 1972

Dr. Pei Shih-chang  
Head of the Delegation  
Delegation of Scientists  
The People's Republic of China

Dear Dr. Pei:

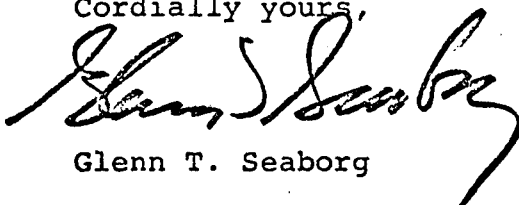
As the coordinating host for your local visit, I am delighted to welcome you to the San Francisco Bay Area. We have anticipated your visit with great enthusiasm and are pleased to have you as our guest.

We have arranged for you to meet some of the major scientists and educators in the Bay Area, and look forward to a mutually rewarding opportunity for an exchange of ideas and information. We have tried to arrange your program at an easy physical pace, with opportunities for your relaxation. However, please tell us when you are tired, because your physical well-being is the highest consideration.

In my responsibility as President of the American Association for the Advancement of Science, I will be in Washington, D.C. until Tuesday. I deeply regret that I cannot be here when you arrive, but I look forward to personally greeting you at your hotel on Wednesday morning and accompanying you throughout the rest of your visit.

Please accept our good wishes and warm welcome.

Cordially yours,



Glenn T. Seaborg



start, I took a taxi. Here I boarded United Airlines Flight No. 585, which left at 2:40 p.m. and arrived at San Francisco Airport at 6:20 p.m. Helen met me and drove me home. It was snowing in Orinda and Lafayette! Cernan and Schmitt walked on the moon for 7-1/2 hours today, observing some orange soil.

Wednesday, December 13, 1972 - Berkeley

I arrived at my office at 7:20 a.m. and went over a few office matters with Sheila. I wrote Joseph Kaplan in connection with the dinner honoring his 70th birthday (copy attached).

At 7:30 a.m., Steve Fuhrman, a University driver, picked me up and drove me to the Stanford Court Hotel in San Francisco. I went up to the security room on the second floor and there met Anne Keatley (Executive Secretary, Committee on Scholarly Communication with the People's Republic of China, National Academy of Sciences), the Head of the Delegation, Dr. Pei Shih-chang (Director, Institute of Biophysics, Chinese Academy of Sciences), and the other members of the delegation: Mr. Pai Chieh-fu, Deputy Head of the Delegation (a scientific administrator, member of the Scientific and Technical Association Presidium and the Peking Municipal Bureau of Science and Technology); Dr. Chang Wen-yu (Deputy Director, Institute of Atomic Energy, Chinese Academy of Sciences); Dr. Tsien Jen-yuan (one of China's leading polymer scientists, associated with the Institute of Chemistry, Chinese Academy of Sciences); Dr. Tsien Wei-chang (Professor of Mechanics, Tsinghua University); Mr. Hu Shih-chuan (Institute of Biochemistry, Shanghai); Mr. Li Fu-sheng (Deputy Head, External Equipment Laboratory, Institute of Computing Technology, Chinese Academy of Sciences, Shenyang).

Of these seven scientists, only Chang Wen-yu, Tsien Jen-yuan, and Tsien Wei-chang spoke English. They were accompanied by Mr. Hsu Chao-hsiang, Secretary of the Delegation; Mr. Wang Li and Mr. Li Ming-te, interpreters; Mr. Liu Chung-jen (Second Secretary, People's Republic of China Mission to the United Nations in New York), and Mr. Tu Pei-lin (correspondent, New China News assigned to the PRC Mission to the United Nations). Biographical information on the delegation is attached.

Besides Anne Keatley, the 12 Chinese were accompanied by Denise Emery (Secretary, Committee on Scholarly Communication with the PRC at NAS), Carol Rogers (Information Officer, National Academy of Sciences, who arrived in San Francisco only last night), and Guy Alitto (Research Associate in the History Department at Harvard, who served as Interpreter throughout their tour in the United States). We were also joined by Dr. and Mrs. Emil Smith (Chairman, Committee on Scholarly Communication, who had come up from UCLA for the visit) and Dr. and Mrs. Jeremy Stone (Director, Federation of American Scientists, who arrived last night from Washington for the duration of the visit).

At 8:45 a.m., all of us boarded the Gray Line sightseeing bus (which was reserved for the delegation throughout their visit and which was always preceded by a highway patrol car and an unmarked security car and followed by another highway patrol car) and drove to the Berkeley campus, where we arrived at University Hall at 9:10 a.m.

(October 18, 1972)  
December 13, 1972

Professor Joseph Kaplan  
Department of Physics  
University of California  
Los Angeles, California 90024

Dear Joe:

I am pleased to have the opportunity to write you in connection with the dinner honoring your 70th birthday.

Yours has been a distinguished career in physics, not only in scientific research but as one of our country's leading statesmen of science. Your Chairmanship of the U.S. National Committee for the International Geophysical Year set our country and the world on a course that we are still following.

Your contributions have far exceeded those as a scientist because of your broader human dimension. I have nostalgic memories of the period when we each served as our institution's Faculty Athletic Representative to the Pacific Coast Intercollegiate Athletic Conference. I know firsthand what an outstanding contribution you made here.

Last but not least, I remember with gratitude and pleasure your help to me when I was an undergraduate student at UCLA some forty years ago. Your advice to a somewhat befuddled student at that time concerning graduate schools was of tremendous help in setting me on the right track.

Helen and I wish you and Katherine the very best in your continuing, fruitful activity.

With our warm regards,

Cordially,

Glenn T. Seaborg

Biographical Information  
SCIENTIFIC DELEGATION  
FROM THE PEOPLE'S REPUBLIC OF CHINA

December 1972

Head of Delegation:

PEI Shih-chang (phonetic: BAY) Addressed as Dr. Pei

The leader of the November 1972 Chinese scientific delegation to the United States is Pei Shih-chang, Director of the Institute of Biophysics, Chinese Academy of Sciences. He is also a member of the Standing Committee of the National People's Congress and a member of the Presidium of the Scientific and Technological Association of China. A German-trained experimental biologist, Pei has served since 1957 as director of the Institute of Biophysics, one of the organizations that collaborated in the successful project to determine the crystal-line structure of pig insulin. Pei has specialized in physiology, experimental morphology, and biochemistry.

As a member of the Standing Committee of the National People's Congress since 1965, Pei has appeared regularly at various state functions. He attended the social festivities connected with President Nixon's trip to China in February 1972.

Born circa 1900 in Chekiang Province, Pei received his Ph.D. from the University of Tubingen in Germany in 1928. In 1941 he began a 10-year association with the National Chekiang University in Hangzhou. A member of the Chinese Academy of Sciences since its inception in 1949, Pei served as director of the Academy's Institute of Experimental Biology in Shanghai until 1957. His most recent paper, which was published in 1965, was on the significance of bionics.

Deputy Head of Delegation:

PAI Chieh-fu (phonetic: BYE) Addressed as Mr. Pai

Pai Chieh-fu, a scientific administrator, has been a member of the Scientific and Technical Association Presidium and the Peking Municipal Bureau of Science and Technology for many years. In April 1964 Pai was deputy director of the Chinese Academy of Sciences' Institute of Chemical Physics in Dairen. The same year he wrote an article entitled, "Research results must be applied and popularized as rapidly as possible."

Members of the Delegation:

CHANG Wen-yu (phonetic: JAHNG) Addressed as Dr. Chang

Chang Wen-yu first was identified as deputy director of the Chinese

Academy of Sciences' Institute of Atomic Energy in October 1972. He had previously served as director of the Institute's Cosmic Ray Laboratory since 1957. Although he was involved in research on elementary particles and cosmic rays in the past, he is nevertheless currently a specialist in high-energy physics.

Born on January 9, 1910 in Fukien Province, Chang holds B.S. (1931) and M.S. (1933) degrees from Yenching University and a Ph.D. (1938) from Cambridge University. During 1939-1943 he was a physics professor at Szechwan University and National Southwest Associated University in Kunming. For the next 13 years he lectured in the United States and conducted research at Princeton and Purdue Universities. After returning to China in 1956 he was appointed to the Institute of Physics, now the Institute of Atomic Energy. From 1963 to 1965 he headed the Chinese scientists at the Joint Institute of Nuclear Research in Dubna, USSR.

In 1971 Chang attended a banquet for his former pupil, U.S. physicist Yang Chen-ning. He again met with Yang in July 1972 and a week later with a delegation of Chinese-American scholars. He is married to Wang Ch'eng-shu, who holds a Ph.D. in physics from the University of Michigan. He is fluent in English.

\* CH'IEN Jen-yuan (phonetic: CHEEYEN) Addressed as Dr. Ch'ien

One of China's leading polymer scientists, Ch'ien Jen-yuan has been associated with the Institute of Chemistry of the Chinese Academy of Sciences since 1957. He is a specialist in the chemical properties of high polymers. In 1959 he collaborated in developing a poisonous gas alarm. In June 1972 he greeted visiting American polymer scientists.

Born on September 19, 1917 in Kiangsu Province, he received a B.S. degree in chemistry from the National Chekiang University in Hangzhou in 1939 and subsequently became an assistant instructor there. During the Sino-Japanese War he taught at the National Southwest Associated University in Kunming. During 1944 he studied at the California Institute of Technology, where he worked on heavy water research, and in 1946 received his Ph.D. in physical chemistry from the University of Wisconsin. During 1951-1958 he was affiliated with the Department of Chemistry of Chekiang University and the Chinese Academy of Sciences' Institute of Physical Chemistry in Shanghai, Applied Chemistry in Changchun, and Organic Chemistry in Shanghai.

Ch'ien has written a book and numerous articles on his work. He speaks English and Russian and reads French and German.

\* The anglicization of this name varies. At Berkeley we will use the form adopted by the People's Republic Mission to the United Nations: TSIEN Jen-yuan. The phonetic pronunciation is the same as above: "Cheeyen".

\* CH' IEN Wei-ch'ang (phonetic: CHEEYEN) Addressed as Dr. Ch'ien

A specialist in dynamics and jet propulsion and a professor of mechanics, Ch'ien Wei-ch'ang has been associated with Tsinghua University since 1949.

During 1971-72 Ch'ien met with various American visitors including the William Hinton family, physicist Yang Chen-ning, Professor John K. Fairbank, a delegation of computer scientists, and a group of Chinese-American scholars. Ch'ien also met with President Nixon during the latter's February 1972 trip to China.

Born in 1912 in Kiangsu Province, Ch'ien graduated from Tsinghua University in 1935 and received a Ph.D. from the University of Toronto in 1942. He then worked as a research engineer for the Guggenheim Jet Propulsion Laboratory of the California Institute of Technology until he returned to China in 1949. He then held positions of increasing responsibility at Tsinghua University culminating in the vice-presidency in 1956. He also became deputy director of the Chinese Academy of Sciences' Institute of Mechanics. By 1958 he had become director of the Academy's Institute of Automation and Remote Control.

Ch'ien speaks English fluently.

HU Shih-ch'uan (phonetic: HOO) Addressed as Mr. Hu

A member of the Chinese Academy of Sciences' Institute of Biochemistry in Shanghai since 1961, Hu Shih-ch'uan participated in the institute's research that produced synthetic crystalline bovine insulin, a project that began in 1958. The Academy's Institute of Organic Chemistry and the Chemistry Department of Peking University also collaborated on the project which, when completed in 1965, amounted to one of China's most significant scientific accomplishments.

In 1964 Hu co-authored an article on the progress made in the synthesis of peptide fragments of the B-chain of insulin. In 1969 he was appointed to the Presidium of the Ninth National Congress of the Chinese Communist Party. In February 1972 he attended a banquet for President Nixon during the latter's trip to China.

LI Fu-sheng (phonetic: LEE) Addressed as Mr. Li

Li Fu-sheng is currently the Deputy Head of the External Equipment Laboratory of the Institute of Computing Technology of the Chinese Academy of Sciences, Shenyang.

Secretary of the Delegation

HSU Chao-hsiang (phonetic: SHEW) Addressed as Mr. Hsu

Hsu Chao-hsiang, secretary of the delegation, served as commercial secretary at the Chinese Embassy in Prague in 1962. From 1963 to

\*See footnote on page 2. TSIEN Wei-chang.

1967 he served first as third commercial secretary and then as second commercial secretary in London.

Hsu is fluent in English.

#### Interpreters

WANG Li (phonetic: WAHNG) Addressed as Mr. Wang

Wang Li is one of the two interpreters assigned to the delegation of Chinese scientists.

Li Ming-te (phonetic: LEE) Addressed as Mr. Li

Li Ming-te is one of the two interpreters assigned to the delegation of Chinese scientists.

#### Others Travelling with the Delegation

TU Pei-lin (phonetic: TOO) Addressed as Mr. Tu

Tu Pei-lin is a correspondent of New China News Agency assigned to the People's Republic of China Mission to the United Nations.

LIU Chung-jen (phonetic: LIEW) Addressed as Mr. Liu

Liu Chung-jen is the Second Secretary of the People's Republic of China Mission to the United Nations.

-----

The delegation is visiting the United States under the auspices of the Committee on Scholarly Communication with the People's Republic of China (jointly sponsored by the National Academy of Sciences, the Social Science Research Council, and the American Council of Learned Societies) in cooperation with the Federation of American Scientists.

The delegation is being accompanied throughout their visit by:

Mrs. Anne Keatley, Executive Secretary, Committee on Scholarly Communication with the People's Republic of China, National Academy of Sciences  
Mrs. Denise Emery, Secretary, Committee on Scholarly Communication...  
Ms. Carol Rogers, Information Officer, National Academy of Sciences  
Mr. Guy Alitto, Interpreter

and in California by

Dr. Emil Smith (Professor of Biological Chemistry, UCLA School of Medicine), Chairman of the Committee on Scholarly Communication.

Wednesday, December 13, 1972 (con't)

We went to the Small Regents' Suite on the first floor of the Hall, where the group gathered around the table. Coffee, tea and rolls were served. Others present were: Vice President John A. Perkins, Vice President Angus Taylor, Wilson K. Talley (Assistant Vice President for Academic Planning and Program Review), Charles Susskind (Coordinator of Academic Affairs), William W. Lewis (Director, Office of Analytical Studies), Norman H. Gross (Director, Office of Contracts and Grants), Richard D. Wolfe (Assistant to Vice President Perkins), and Shiing-shen Chern (Professor of Mathematics).

Vice President Perkins opened the session with remarks welcoming the delegation to the University of California. He then described (with the use of a map on the wall) the nine-campus University of California educational system. Dr. Pei Shih-chang responded graciously, through his interpreter, Li Ming-te.

We then boarded the bus and drove to the Lawrence Berkeley Laboratory, arriving at 10:25 a.m. Because Director McMillan was bedridden with a severe cold and could not meet the delegation in his office, we proceeded directly to the Bevatron. At a standup meeting in the entrance area at the upper level, where the walls were filled with charts and illustrative material, I made some opening remarks, giving the history of LBL and describing its present organization, number of employees, main lines of research, and so forth. Following this, Edward J. Lofgren used charts to describe the operation of the Bevatron and the proposed plans for the BEVALAC and so forth, after which Cornelius Tobias and Tom Budinger described, with the help of charts and models, the medical work under way in the Bevatron. Chun-fai Chan (of LBL's Mathematics and Computing Group) served as the translator. On the walking tour of the Bevatron, Owen Chamberlain explained his work. LBL photographer George Kagawa accompanied us throughout our visit to University Hall, LBL, and the Lawrence Hall of Science in the afternoon.

From the Bevatron, we proceeded by bus to the SuperHILAC. We went directly to the Conference Room (which happened to be festively decorated in red and white for Christmas). Over the model of the SuperHILAC and photographs, Albert Ghiorso described the SuperHILAC. We then took the delegation on a full tour, including SASSY, FAKE, and the control room. Mike Nitschke and Ken Hulet were among the HILAC staff on hand to describe their work.

We boarded the bus and drove to the cafeteria, where we gathered at the lower level for a served luncheon. Because Dr. McMillan was absent, I served as host for the luncheon. Those present were all the members of the delegation and, from Berkeley: Luis W. Alvarez, James L. Born, Thomas F. Budinger, Melvin Calvin, Chun-fai Chan, Shiing-shen Chern, Harold A. Fidler, Albert Ghiorso, Donald Glaser, Jack M. Hollander, Earl K. Hyde, John H. Lawrence, Edward J. Lofgren, John O. Rasmussen, Emil L. Smith, Cornelius A. Tobias, William Wenzel, and Sheila Saxby. Andrew Sessler and Charles Townes were expected, but could not attend because of illness.

Wednesday, December 13, 1972 (con't)

After the meal, I made some welcoming remarks and then introduced everyone around the table. Dr. Pei responded, through the interpreter Li Ming-te, saying that the delegation was privileged to be in one room with so many great American scientists.

At 1:30 p.m., I walked with Dr. Pei and the members of the delegation from the cafeteria to the Conference Room of Building 70A. Here, before they began their scheduled half-hour rest period in privacy, Sheila showed slides she had taken during their trip to Muir Woods and Napa Valley on Sunday. This was accompanied by a great deal of laughter and delighted exclamations in Chinese. Emil Smith visited with me in my office while the delegation rested in the Conference Room. I then brought the delegation into my office, where they were shown some of the artifacts. I gave copies of Man and Atom and Nuclear Milestones to Dr. Pei and Dr. Chang.

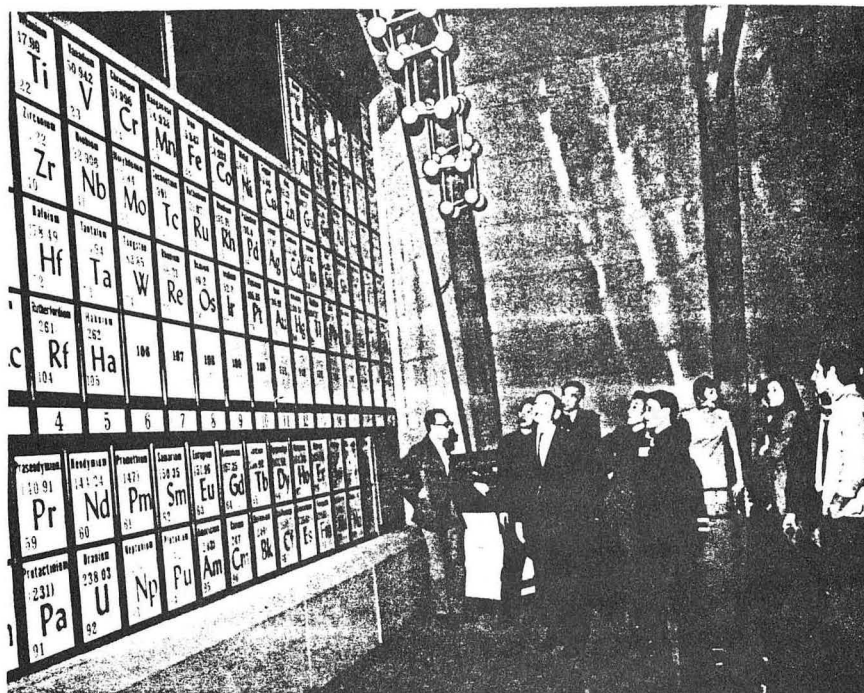
We then all boarded the bus and drove to the Lawrence Hall of Science, where we arrived at 2:30 p.m. Here we were met by the Director, Watson M. Laetsch, who described the purposes and activities of the Hall. We showed the delegation the rock collection, then went to the exhibit hall with the various games demonstrating physical laws, and from there to the computer games room. I described the Periodic Table board and the discovery of the transuranium elements at Berkeley. On our way to the lower level, we stopped at the computer in the lobby where a young boy was sitting entranced as he worked the computer. Dr. Tsien Wei-chang and Pei Shih-chang watched him work with as much fascination. On the lower level, we showed the delegation the various teaching laboratories; they were given a demonstration of the robot. We then proceeded to the cafeteria, where the Hall staff served a buffet of cold cuts, cheeses and fruits, together with tea (procured in the People's Republic of China by Dr. George Hoo and opened for this occasion). The group sat around the tables and held many lively conversations. The other Lawrence Hall of Science staff who assisted with the tour were Robert Karplus, Mauri Gould, Leon Henkin, and Robert Content. Several members of the press were on hand to take pictures.

We posed for a group picture outside the Hall, after which the delegation boarded their bus, at 4:30 p.m., and returned to the city. I rode back to my office with Sheila, in her car, and Jeremy Stone.

Suki and I took a hike to the water tank. I watched on TV the last walk on the moon by Cernan and Schmitt, the last walk by anyone for a long time. President Truman is now critically ill again.

The delegation invited Sheila to a small dinner which they hosted in San Francisco for the American friends (Anne Keatley, Denise Emery, Carol Rogers, and Guy Alitto) who had traveled with them throughout their visit in the United States. It was held at the Sheng-yuen Restaurant in The Cannery on Fisherman's Wharf, with a group of about 30 people present. Dr. Chang Wen-yu served as Sheila's host. A 12-course Chinese dinner was served, there were many toasts, and the Deputy Head of the Delegation, Mr. Pai Chieh-fu, who acted as Master of Ceremonies, proved to be an eloquent speaker (in Chinese).



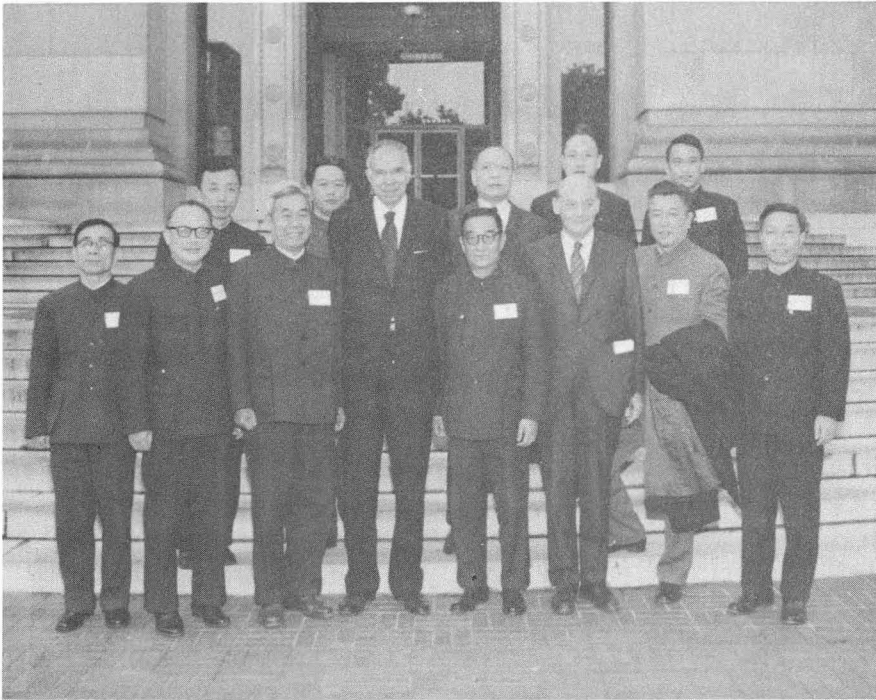


Demonstration of Periodic Table Light Board.

Visit of the Scientific Delegation from the People's Republic of China to the University of California at Berkeley: December 13, 1972.

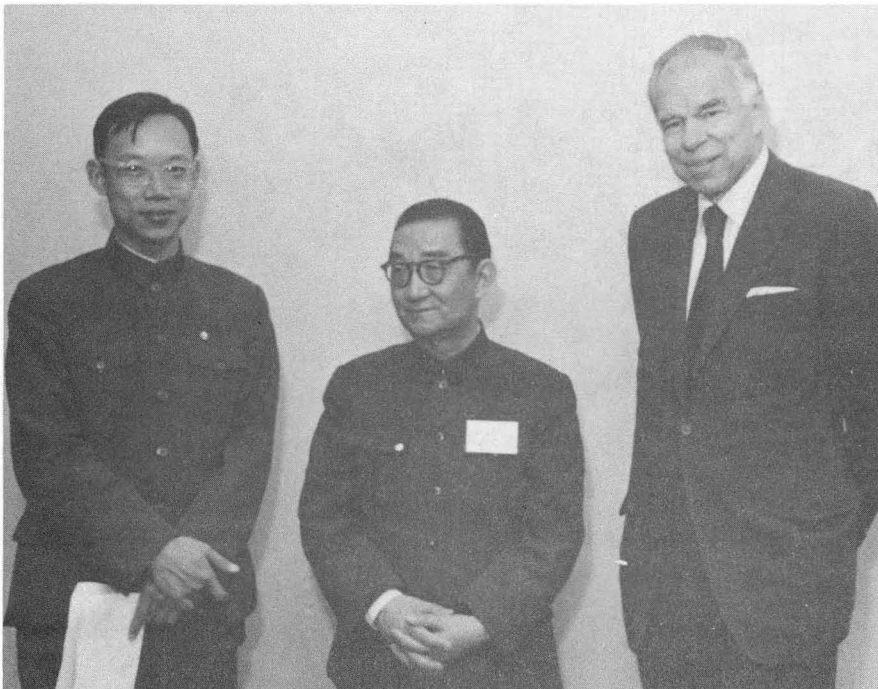
Reception by Vice President John A. Perkins.





Front row (l. to rt.): Wang Li, Tsien Wei-chang, Chang Wen-yu, GTS, Pei Shih-chang, Emil Smith, Pai Chieh-fu, Tsien Jen-yuan; Second row (l. to rt.): Li Fu-sheng, Liu Chung-jen, Shiing-shen Chern, Hsu Chao-hsiang, Hu Shih-chuan, 12/13/72.

Li Ming-te, Pei Shih-chang, GTS, 12/13/72.



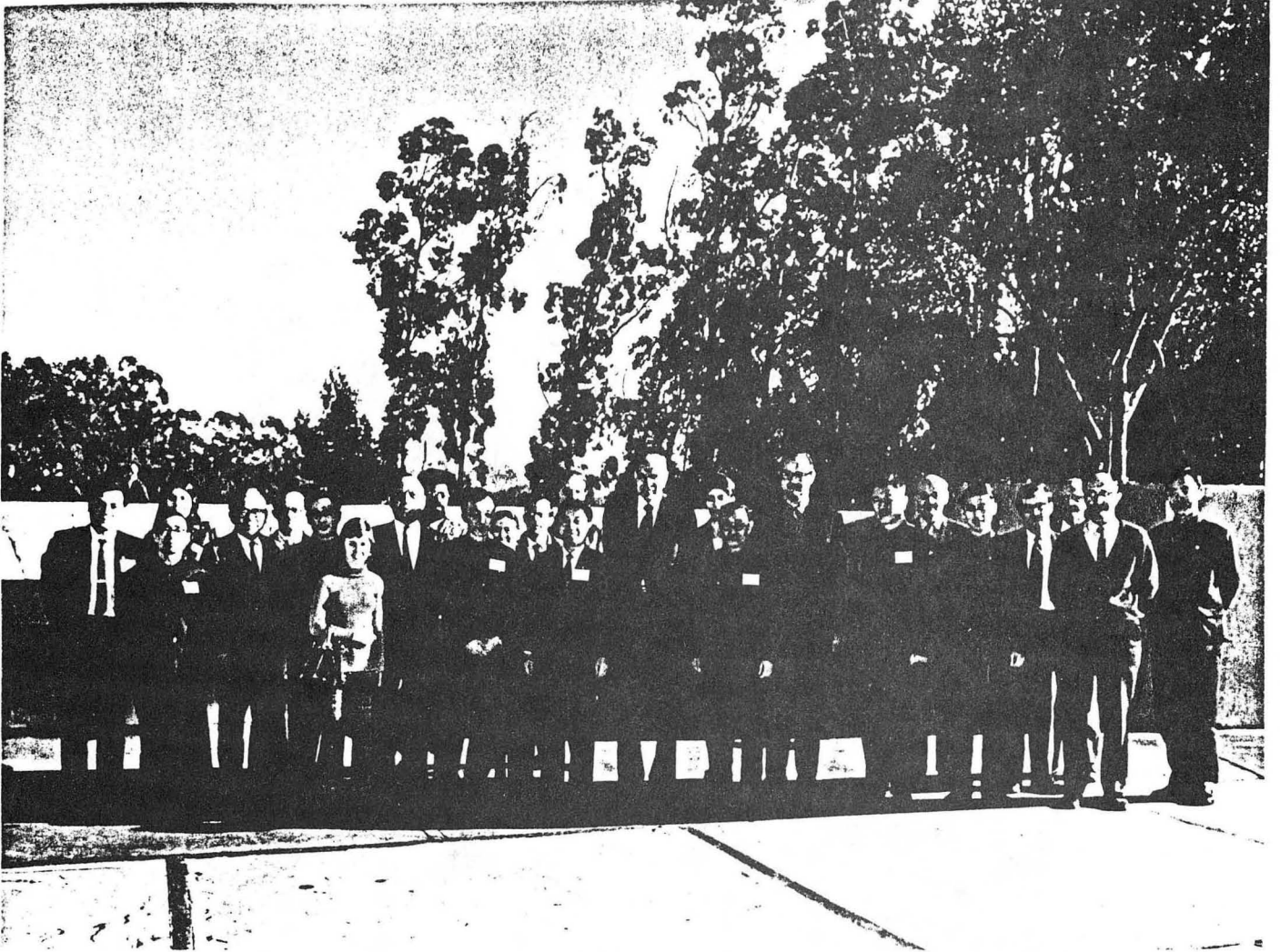


The SuperHILAC Conference Room.

Visit of the Chinese Scientific Delegation: December 13, 1972.

The Lawrence Hall of Science.





Visit of the Scientific Delegation from the People's Republic of China to the Lawrence Hall of Science: December 13, 1972.





Chancellor Albert H. Bowker and Dr. Pei Shih-chang,  
Luncheon, University House: December 14, 1972.

Dr. Chang Wen-yu, GTS, Reception in the Chancellor's  
Conference Room: December 14, 1972.



Thursday, December 14, 1972 - Berkeley - San Francisco

I arrived at my office on the hill at 7:15 a.m. and went over some last minute matters with Sheila. At 7:30 a.m., Steve Fuhrman picked me up and drove me to the Stanford Court Hotel, where I met the members of the Chinese scientific delegation in the security room. We boarded the Gray Line sightseeing bus and drove to California Hall on the Berkeley campus, arriving at 9:20 a.m.

Chancellor Albert H. Bowker greeted the delegation in the Chancellor's Conference Room, where everyone gathered around the conference table. Those present from the University of California were: Chancellor Albert H. Bowker, Vice Chancellor Mark N. Christensen, Professor Garff B. Wilson (Chairman of Protocol and Public Ceremonies), and Professor Shiing-shen Chern, who sat between Chancellor Bowker and Dr. Pei and served as interpreter. I sat between Dr. Pei Shih-chang and Dr. Chang Wen-yu. Coffee, tea and rolls were served. Chancellor Bowker extended formal welcoming remarks, to which Dr. Pei responded briefly. The balance of the half-hour session was spent in personal conversations.

From here, I walked with the delegation to the east end of the campus, stopping at the University Library steps for picture taking and again with the campanile in the background.

I accompanied Professor Pei Shih-chang, Professor Tsien Jen-yuan, Mr. Hu Shih-chuan, and Mr. Hsu Chao-hsiang to the Latimer Hall Commons Room, where our scheduled program with faculty in Chemistry and Biological Sciences was to be held (copy attached). Those present were: Clinton E. Ballou, Neil Bartlett, Leo Brewer, Melvin Calvin, Frederick H. Carpenter, William G. Dauben, Donald A. Glaser, Daniel Mazia, C. Bradley Moore, Kenneth S. Pitzer, Henry Rapoport, Howard K. Schachman, David A. Shirley, Esmond E. Snell, and David H. Templeton; Myrtle Hsiang and Shih-ger Chang served as interpreters.

I made some opening remarks, indicating the extent of the program and emphasizing that no conclusions should be drawn comparing the people who were speaking with those who were not. I then introduced each of the speakers in turn. Neil Bartlett spoke first on "Compounds of the Noble Gases." Melvin Calvin then made a presentation on "Metabolic Regulation in Photosynthesis and in Malignant Tissue Culture." C. Bradley Moore then spoke on "Application of Lasers in Chemistry." Frederick Carpenter spoke next on "Remarks on Synthesis of Insulin and Relationship of Structure to Biological Activity." Daniel Mazia then discussed "Biophysics of Fertilization," followed by Howard Schachman on "Structure, Function and Dynamics of a Regulatory Enzyme." Myrtle Hsiang did the translating for the presentations of Calvin, Carpenter, Mazia, and Schachman; Shih-ger Chang translated the presentations of Bartlett and Moore. Howard Schachman's student, Ying Yang, translated his presentation. (We received numerous compliments from members of the delegation on the technical translators, as among the finest they had had on their whole trip.)

The program began and ended exactly on schedule and, although I offered opportunities for questions, Professor Pei indicated that, in view of the time stringency, perhaps there should be none.

## University of California, Berkeley

PROGRAM ON CHEMISTRY AND BIOLOGICAL SCIENCES  
for members of the scientific delegation  
from the People's Republic of China  
Thursday, December 14, 1972. 10:15 a.m.-12:00 noon  
Commons Room, first floor, Latimer Hall

Chinese guests: Professor Pei Shih-chang (Head of the Delegation)  
Professor Tsien Jen-yuan  
Mr. Hu Shih-chuan  
Mr. Hsu Chao-hsiang (Secretary of the Delegation)

Dr. Glenn T. Seaborg will preside.

Descriptions of their work will be presented by:

Dr. Neil Bartlett, Professor of Chemistry, and Principal Investigator,  
Inorganic Materials Research Division, Lawrence Berkeley Laboratory.  
Dr. Melvin Calvin, University Professor of Chemistry, and Director,  
Chemical Biodynamics Laboratory.  
Dr. Frederick H. Carpenter, Professor of Biochemistry, and Dean of  
Biological Sciences, College of Letters and Science.  
Dr. Daniel Mazia, Professor of Zoology.  
Dr. C. Bradley Moore, Professor and Vice Chairman, Department of  
Chemistry.  
Dr. Howard K. Schachman, Professor and Chairman, Department of  
Molecular Biology, and Director, Virus Laboratory.

Other faculty participating in the discussion:

Dr. Clinton E. Ballou, Professor of Biochemistry.  
Dr. Leo Brewer, Professor of Chemistry, and Head, Inorganic Materials  
Research Division, Lawrence Berkeley Laboratory.  
Dr. William G. Dauben, Professor of Chemistry.  
Dr. Donald A. Glaser, Professor of Molecular Biology and Physics,  
and Research Biophysicist, Virus Laboratory.  
Dr. Kenneth S. Pitzer, Professor of Chemistry, and Principal  
Investigator, Inorganic Materials Research Division, Lawrence  
Berkeley Laboratory.  
Dr. Henry Rapoport, Professor of Chemistry.  
Dr. David A. Shirley, Professor and Chairman, Department of Chemistry,  
and Senior Chemist, Nuclear Chemistry Division, Lawrence Berkeley  
Laboratory.  
Dr. Esmond E. Snell, Professor of Biochemistry.  
Dr. David H. Templeton, Dean of the College of Chemistry, and Senior  
Chemist, Nuclear Chemistry Division, Lawrence Berkeley Laboratory.

Technical interpreters:

Dr. Myrtle Hsiang, Research Associate, Department of Biochemistry.  
Dr. Shih-ger Chang, Postdoctorate, Department of Chemistry.

The Delegation will find biographical information on the above in  
the prepared booklet.

Thursday, December 14, 1972 (con't)

While the program in Chemistry was going on, Eugene Commins presided over the Physics and Engineering meeting in LeConte Hall for Mr. Pai Chieh-fu, Professor Chang Wen-yu, Professor Tsien Wei-chang, and Mr. Li Fu-sheng (program attached). There, Luis Alvarez spoke on "The Balloon Project, the Liquid Xenon Wire Chamber, and the Pyramid Project." John Clarke made a presentation on "Recent Developments in Josephson Junction Devices." Chieh Su Hsu spoke on "Some Methods of Dynamic Stability Analysis of Mechanical Systems." Gareth Thomas (in the absence of Victor Zackay) spoke on "The Role of Electron-microscopy in Materials Science and Engineering." Chang L. Tien spoke next on "Heat Transfer, Thermal Radiation and Cryogenics," and Eugene Wong made a presentation on "Computer Based Information Systems." This program also ran on schedule and they joined us at the bus for the ride down to University House.

We arrived there at 12:20 p.m. The guest list for this occasion (copy attached) was comprised mainly of China scholars and University officials. The University of California personnel present were: Chancellor Albert H. Bowker (whose mother, Mrs. Roy Bowker, was present in the foyer to greet the delegation upon their arrival), Vice Chancellor Mark N. Christensen, Dean David H. Templeton, Provost Roderic B. Park, Provost George J. Maslach, Chalmers A. Johnson (Chairman, Center for Chinese Studies), Frederic Wakeman (Chairman-Elect, Center for Chinese Studies), Joyce K. Kallgren (Vice Chairman, Center for Chinese Studies), Dr. Yuen Ren Chao (Professor Emeritus of Oriental Languages; author of the first Mandarin-English dictionary), John S. Service, John C. Jamieson, John Bryan Starr, Wen-shun Chi, Ch'eng-chih Shih, James D. Hart, Richard E. Erickson, Shiing-shen Chern, Emil Smith, and Sheila Saxby.

After a social hour on the main floor, the group went to the Grand Ballroom downstairs, where we were seated 4-5 people at each table. I sat at the center table with Chancellor Bowker, Dr. Pei, Shiing-shen Chern, and Dr. Yuen Ren Chao. Chancellor Bowker made a few remarks of greeting and proposed a toast to the delegation, after which Dr. Pei spoke and proposed a toast.

We left the Chancellor's House at 1:45 p.m. on the bus, and I accompanied the delegation to San Francisco, where we arrived at the Stanford Court Hotel at about 2:30 p.m. I spent most of the time between then and the scheduled press conference in Emil Smith's room, talking to Smith and Marvin L. Goldberger about the general course of the visit and making plans for this evening's farewell banquet.

We then went down to Ballroom East where all the members of the delegation and their interpreters sat at a table, flanked on one side by Goldberger and on the other by Emil Smith and me. Emil introduced the individual Chinese visitors, after which Professor Pei made an opening statement expressing general satisfaction with their visit, followed by a shorter statement by Mr. Pai. The questions were along the general lines of impressions concerning the visit, comparison of the progress of science and technology and applications of these in China and the United States, the state of nuclear science in China, and so forth. The answers were rather general, along the lines that



University of California, Berkeley

PROGRAM ON PHYSICS AND ENGINEERING  
for members of the scientific delegation  
from the People's Republic of China

Thursday, December 14, 1972. 10:15 a.m.-12:00 noon  
Room 375 LeConte Hall

Chinese guests: Mr. Pai Chieh-fu (Deputy Head of the Delegation)  
Professor Chang Wen-yu  
Professor Tsien Wei-chang  
Mr. Li Fu-sheng

Dr. Eugene D. Commins, Professor and Chairman of the Department of  
Physics, will preside.

Descriptions of their work will be presented by:

Dr. Luis W. Alvarez, Professor of Physics, and Senior Physicist,  
Lawrence Berkeley Laboratory.  
Dr. John Clarke, Associate Professor of Physics.  
Dr. Chieh Su Hsu, Professor of Applied Mechanics, Department of  
Mechanical Engineering.  
Dr. Gareth Thomas, Professor of Metallurgy, Department of Materials  
Science and Engineering.  
Dr. Chang L. Tien, Professor and Vice Chairman of Instruction,  
Department of Mechanical Engineering.  
Dr. Eugene Wong, Professor and Vice Chairman, Department of Electrical  
Engineering and Computer Sciences.

Other faculty participating in the discussion:

Dr. Leo Brewer, Professor of Chemistry, and Head, Inorganic Materials  
Research Division, Lawrence Berkeley Laboratory.  
Dr. Shiing-Shen Chern, Professor of Mathematics.  
Dr. Ernest S. Kuh, Professor of Electrical Engineering and Computer  
Sciences.  
Dr. Arthur H. Rosenfeld, Professor of Physics, and Physics Group  
Leader, Lawrence Berkeley Laboratory.  
Dr. P. Emery Thomas, Professor and Chairman, Department of Mathematics.

Technical interpreting will be provided by those within the  
Berkeley faculty group.

The Delegation will find biographical information on the above in  
the prepared booklet.

FAS Banquet - 14 December 1972

Alphabetical list and table assignments

Alitto, Mr. Guy - 6  
 Alvarez, Dr. Luis - 3  
 Ballou, Dr. Clinton E. - 6  
 Ballou, Mrs. - 6  
 Barankin, Dr. Edward W. - 5  
 ↗ Birge, Dr. Ann - 3  
 Birge, Dr. Robert - 3  
 Brode, Dr. Robert B. = 3  
 Calloway, Dr. Doris - 5  
 Chamberlain, Dr. Owen - 7  
 Chan, Dr. C. F. - 7  
 Chang, Dr. Wen-yu - 3  
 Chao, Dr. Yuen Ren - 8  
 Chern, Dr. S. S. - 2  
 Chew, Dr. Denyse Mettel - 2  
 Chew, Dr. G. F. - 2  
 Chodorow, Dr. Marvin - 2  
 Cockrell, Dr. Robert A. - 8  
 Commins, Dr. Eugene - 3  
 Davis, Dr. Judith - 10  
 Davis, Dr. Kingsley - 10  
 Dempster, Dr. Everett R. - 5  
 DeWitt, Dr. Hugh - 10  
 Diamond, Dr. Marian - 4  
 Diamond, Dr. Richard - 4  
 ↖ Bienenstock, Dr. Arthur - 10  
 Drell, Dr. Sidney - 2  
 Elberg, Dr. Sanford S. - 9  
 Emery, Mrs. Denise - 2  
 Gee, Mr. S. Paul - 10      Garren, Dr. A - 9  
 Ghiorso, Dr. Albert - 4  
 Glaser, Dr. Donald A. - 6  
 Glass, Dr. Laurel E. - 10  
 Goldberger, Mr. Joel - 9  
 Goldberger, Dr. Marvin L. - 1  
 Graham, Dr. Martin - 7  
 Harder, Dr. James A. - 5  
 Helmholtz, Dr. A. C. - 3  
 Henkin, Dr. Leon - 5  
 Hollander, Dr. J. M. - 10  
 Hsu, Mr. Chao-Hsiang - 8  
 Hsu, Dr. Chich Su = 5  
 Hu, Mr. Shih-chuan - 6  
 Kane, Dr. Daniel F. - 7  
 Keatley, Mrs. Anne - 2  
 Kuh, Dr. Ernest S. - 7  
 Laetsch, Dr. W. M. - 10  
 Lawrence, Dr. John H. - 1

Lee, Dr. Philip R. - 6  
Levinthal, Dr. Elliott - 6  
Li, Mr. Fu-Sheng - 7  
Li, Mr. Ming-te - 1  
Li, Dr. Victor - 9  
Link, Dr. George H. - 2  
Liu, Mr. Chung-jen - 9  
Markowitz, Dr. Samuel S. - 4  
Mather, Dr. Jennie - 6  
McHenry, Dr. Dean E. - 8  
Miller, Dr. William - 7  
Neyman, Dr. Jerzy - 8  
Oppenheimer, Dr. Frank - 6  
Oppenheimer, Mrs. - 6  
Pai, Mr. Chieh-fu - 2  
Panofsky, Dr. W. K. H. - 1  
Pei, Dr. Shih-chang - 1  
Perkins, Dr. John A. - 8  
Perl, Dr. Martin - 9  
Perlman, Dr. Isador - 5  
Pitzer, Dr. Kenneth S. - 2  
Platt, Dr. John R. - 10  
Rasmussen, Dr. John - 1  
Richards, Dr. David R. - 7  
Rogers, Ms. Carol - 8  
Rosenfeld, Dr. A. H. - 3  
Ross, Dr. Ronald R. - 3  
Saxby, Mrs. Sheila M. - 95  
Scott, Dr. Elizabeth - 8  
Seaborg, Dr. Glenn T. - 91  
Seaborg, Mrs. - 21  
Sessler, Dr. Andrew - 8  
Sessler, Mrs. Gladys - 8  
Shirley, Dr. David A. - 4  
Shirley, Mrs. - 4  
Shu, Dr. Ping - 4  
Smith, Dr. Emil - 1  
Smith, Mrs. - 1  
Sooy, Dr. Francis A. - 2  
Steingart, Mrs. June - 7  
Stone, Dr. Jeremy - 1  
Stone, Mrs. - 1  
Strauss, Dr. Herbert - 9  
Templeton, Dr. David H. - 4  
Templeton, Dr. Lieselott K. --4  
Tien, Dr. Chang L. - 5  
Timiras, Dr. Paola - 9  
Tsien, Dr. Jen-yuan - 4  
Tsien, Dr. Wei-Chang - 5  
Tu, Mr. Pei-lin - 10  
Wang, Mr. Li - 2  
Wenzel, Dr. Bernice - 9  
Wu, Dr. William Ding Yee - 9  
Zoba, Mrs. Jane Kingston - 7

Table List and Seating Arrangement for FAS Banquet, 14 December, 8 pm  
(as of 3:30 on Wed. 13 December, subject to change)

Table 1 (central)

1. Dr. Pei Shih-chang
2. Mr. Li Ming-te (interpreter)
3. Dr. Glenn T. Seaborg
4. Mrs. Seaborg
5. Dr. J. Stone
6. Mrs. J. Stone
7. Dr. John H. Lawrence
8. Dr. John Rasmussen
9. Dr. Marvin L. Goldberger
10. Dr. Emil Smith
11. Mrs. Smith
12. Dr. W. K. H. Panofsky

Table 2 (central)

1. Mr. Pai Chieh-fu
2. Mr. Wang Li (int.)
3. Mrs. Denise Emery
4. Dr. Sidney Drell
5. Dr. G. F. Chew
6. Dr. D. M. Chew
7. Dr. Marvin Chodorow
8. Dr. Francis A. Sooy
9. Dr. Kenneth S. Pitzer
10. Dr. S. S. Chern
11. Mrs. Anne Keatley
12. Dr. George H. Link

Table 3

1. Dr. Chang Wen-Yu
2. Dr. Luis Alvarez
3. Dr. Arthur H. Rosenfeld
- 4.
5. Dr. Eugene Commins
6. Dr. A. C. Helmholz
7. Dr. Ronald R. Ross
8. Dr. Robert Birge
9. Dr. Ann Birge
10. Dr. Robert B. Brode

Table 4

1. Dr. Tsien Jen-yuan
2. Dr. Ping Shu
3. Dr. A. Ghiorso
4. Dr. David H. Templeton
5. Dr. Lieselott K. Templeton
6. Dr. D. A. Shirley
7. Mrs. Shirley
8. Dr. Richard Diamond
9. Dr. Marian Diamond
10. Dr. S. Markowitz

Table 5

1. Dr. Tsien Wei-Chang
2. Dr. Leon Henkin
3. Dr. Chieh Su Hsu
4. Dr. Chang L. Tien
5. Dr. Everett R. Dempster
6. Dr. Doris Calloway
7. Dr. Edward W. Barankin
8. Mrs. Sheila M. Saxby
9. Dr. James A. Harder
10. Dr. Isador Perlman

Table 6

1. Mr. Hu Shih-chuan
2. Mr. Guy Alitto (interpreter)
3. Dr. Clinton E. Ballou
4. Mrs. Ballou
5. Dr. Donald Glaser
6. Dr. Jennie Mather
7. Dr. Elliott Levinthal
8. Dr. Frank Oppenheimer
9. Mrs. Oppenheimer
10. Dr. Philip R. Lee

Table 7

1. Mr. Li Fu-Sheng
2. Dr. C. F. Chan (interpreter)
3. Dr. Martin Graham
4. Dr. David R. Richards
5. Mrs. Jane Kingston Zoba
6. Dr. Owen Chamberlain
7. Mrs. June Steingart
8. Dr. William Miller
9. Dr. Ernest S. Kuh
10. Dr. Daniel F. Kane

Table 8

1. Mr. Hsu Chao-Hsiang
2. Dr. John A. Perkins
3. Dr. Yuen Ren Chao
4. Dr. Dean E. McHenry
5. Ms. Carol Rogers
6. Dr. Elizabeth Scott
7. Dr. Jerzy Neyman
8. Dr. Robert A. Cockrell
9. Dr. Andrew Sessler
10. Mrs. Gladys Sessler

Table 9

1. Mr. Liu Chung-jen
2. Dr. Sanford S. Elberg
3. Dr. William Ding Yee Wu
4. Dr. Victor Li
5. Dr. Bernice Wenzel
6. Dr. Paola Timiras
7. Mr. Joel Goldberger
8. Dr. Martin Perl
9. Dr. Herbert Strauss
10. Dr. A. Garren

Table 10

1. Mr. Tu Pei-lin
2. Dr. Arthur Dienenstock
3. Mr. S. Paul Gee
4. Dr. W. M. Laetsch
5. Dr. Laurel E. Glass
6. Dr. J. M. Hollander
7. Dr. John R. Platt
8. Dr. Judith Davis
9. Dr. Kingsley Davis
10. Dr. Hugh DeWitt

Thursday, December 14, 1972 (con't)

China started from zero in the science and technology field at the time of the liberation in 1949 and has made a great deal of progress in the last twenty-or-so years, and they intend to catch up with the United States as soon as possible. There were general statements about future visits of U.S. scientists to China and of Chinese scientists to the United States.

Following the press conference, I went to the security room to read some papers that I had brought along and wait until it was time to depart for the dinner at the St. Francis Hotel. After a cup of tea in the Potpourri Coffee Shop, I left a little after 6:00 p.m. and took a walk around San Francisco to look at the general Christmas activity, arriving at the St. Francis a little before 7:00 p.m., meeting Chancellor Dean McHenry as I went into the hotel. We went up to the California Room, where I arrived just in time to greet our Chinese guests when they entered, having come by bus from the Stanford Court Hotel. Helen met me here.

A cocktail reception preceded the formal banquet; here Helen and I renewed acquaintance with many old friends. The group--about 100 people--then proceeded into the California Room to their designated places at the banquet tables. Helen and I sat at the first central table with Dr. Pei Shih-chang, Mr. Li Ming-te (the interpreter), Dr. and Mrs. Jeremy Stone, Dr. John H. Lawrence, John O. Rasmussen, Marvin L. Goldberger, Dr. and Mrs. Emil Smith, and Dr. W. K. H. Panofsky. An elegant pheasant dinner was served. Senator Alan Cranston arrived during the meal. I met him after he appeared in the door and escorted him back to our table.

Marvin Goldberger served as Master of Ceremonies in his capacity as Chairman of the Federation of American Scientists, which sponsored this farewell banquet to the delegation from the United States. Guy Alitto served as the interpreter for both the English- and Chinese-spoken remarks during the evening. Goldberger recalled his visit to China with the F.A.S. delegation and reflected on this delegation's visit to the United States, which took them to the Washington, D.C. area, the New York area, Boston, Chicago, and the San Francisco Bay Area. He read the names of those who had sent greetings to the delegation (which I had solicited from my office): Governor Ronald Reagan, Mayor Joseph Alioto, Senator John Tunney, Congressman Ronald Dellums, and Senator James Symington. (He did not read each of the greetings, but turned them over in multiple copies for the delegation to take home with them.) He then showed a sample of the Federation of American Scientists' gift to each member of the delegation: a silver-cased notepad and silver pencil set, inscribed "From your American friends..."

He called on Senator Alan Cranston, who spoke of his hopes for scientific and technological cooperation between our two countries, particularly on such problems as earthquake control. He concluded his remarks with a quotation of Lao Tse.

Goldberger then proposed a toast--for which the entire audience rose--and called on Dr. Pei Shih-chang to make some remarks. Dr. Pei

spoke simply and eloquently in Chinese, saying that he would gladly devote his life to continued scientific cooperation between our peoples. On behalf of the delegation, he presented a gift of a Chinese scroll to Goldberger. He proposed a toast to our continued friendship.

Goldberger commended Anne Keatley for her work in coordinating the delegation's visit in the United States and Jane Kingston Zoba (of Art Rosenfeld's staff at LBL, who worked closely with Sheila and me in her preparations) for her arranging of the farewell banquet.

Helen and I drove home at 10:30 p.m. Today's Berkeley Gazette announced the publication of my book, Nuclear Milestones.

Friday, December 15, 1972 - San Francisco - Berkeley

I picked up Marvin Goldberger at the Durant Hotel in Berkeley and drove to the San Francisco Airport, arriving at 8:00 a.m., where Merv, Sheila, the Jeremy Stones, and I met with the Chinese scientists in the United Airlines Aloha Lounge to see them off on their flight to New York, the first stop on their return to China via Paris. A continental breakfast was served, and we conversed in informal small groups before they boarded their plane at 8:40 a.m.

After this, I drove back to my office at LBL. Sheila drove to the Stanford Court Hotel to pick up three large cartons of the literature which the delegation had picked up in the United States, for us to ship to Peking.

Norman Hackerman (who is a member of the Townes Committee) called to ask if I had any interest in the Presidency of Argonne Universities Association, and I said no. I asked him whether the Committee would conduct a review of the LBL Nuclear Chemistry program and, on the basis of my urging, he said he would look into it by getting in touch with Townes.

I had lunch in the cafeteria with Hyde to discuss the general state of affairs in the Nuclear Chemistry Division and events that occurred during my absence, particularly the plans for budgeting to allocate more money for heavy ion research at the expense of high energy research.

Thomas C. Blaisdell, Jr., Associate Director of the Institute of International Studies, called me at 3:25 p.m. to renew his invitation for me to speak at a joint IIS/World Affairs Council one-day conference on aspects of the international energy problem, to be held in San Francisco--an invitation which I had previously declined. They have changed the date to February 15, 1973, and, after some discussion, I agreed to do it.

I called Ian Campbell, President of the California Academy of Sciences, to invite him to serve on the advisory committee for the AAAS Annual Meeting, which he said he would be glad to do. Jean Fuger, who is visiting LBL for a couple of weeks just prior to completing a three-month stay in the United States, dropped in to see me at 4:00 p.m.



I talked to Liljenzin and Kratz about the results of the bombardment of uranium with 40 nanoamperes of argon ions in the SuperHILAC from 10:00-11:00 p.m. last night. They are observing easily measurable yields of radioisotopes in the platinum, gold region, but no signs of alpha or spontaneous fission activities that might be ascribed to superheavy elements.

Suki and I took our hike to the water tank. Eric and Steve came home for Christmas vacation.

Saturday, December 16, 1972 - Lafayette

Suki and I took a hike to the water tank in the morning. Dave, Eric, Kirk Robinson (Eric's friend), and I went to Candlestick Park to see the San Francisco Forty Niners-Minnesota Vikings football game; San Francisco won, 20-17, by scoring a touchdown in the last 25 seconds. On the way to the game, we dropped Steve at Ron and Joan's in Berkeley, where he will spend the night. In the evening, I worked on Travels in the New World.

Sunday, December 17, 1972 - Lafayette

I worked on Travels in the New World, read articles, AAAS material, etc. I watched parts of the professional football games on TV. Dave, Eric, Dianne, and I bought a Christmas tree at the lot across from Acalanes High School. Eric, Suki and I took a hike around the Lafayette Reservoir in the rain, which was with us all day. The weather is gradually warming up from the long cold spell.

Monday, December 18, 1972 - Berkeley

Lew Keller called me from Oak Ridge at 9:15 a.m. He just received a letter from Mikheev, still insisting that he visit two months at Oak Ridge to work on the chemistry of elements 100 and 101 and two months at LBL to work on the chemistry of 102 (looking for the +1 oxidation state) and higher elements. He is now talking about coming in the fall of 1973; but, since this is when Silva would presumably be in Moscow, Keller would prefer that Mikheev come in April of 1973. Keller would like me to write Spitsyn with some kind of a definite proposal in order to get this thing settled. Keller will call me the first week in January to learn my plan of action. I told him that Ghiorso has invited Zvara to visit LBL in January.

Adrian Kragen called me at 9:35 a.m., inviting me to serve as an advisory trustee of Alta Bates Hospital. He indicated that it would be a position involving some time commitment; they meet at least three or four times a year, in addition to other activity. I indicated that I could not add this to my responsibilities this year. However, I suggested he contact me again in a year if he wishes, and I would be glad to consider it then.

I received a letter (copy attached) from David W. Young, President of the American Institute of Chemists, notifying me that I have been selected as the recipient of the Gold Medal Award of the AIC for its 50th Anniversary Year, 1973. The medal will be presented in Houston on May 18, 1973.



# The American Institute of Chemists

79 Madison Avenue, New York, New York 10016 (212) 686-1421

President: Dr. David W. Young, Partner, R. B. MacMullen Associates, 18508 Clyde Avenue, Homewood, Illinois 60430

AD 12/12/72

December 12, 1972

Dr. Glenn T. Seaborg, Hon. AIC  
Lawrence Berkeley Laboratory  
University of California  
Berkeley, California 94720

Dear Dr. Seaborg:

It is with a great deal of pleasure that I hasten to write that you have been selected the recipient of the Gold Medal Award of The American Institute of Chemists for its 50th Anniversary Year, 1973. My sincerest congratulations!

Our Gold Medal is presented annually to stimulate activities of service to the science of chemistry or the profession of chemist or chemical engineer in the United States of America and recognizing such activities. You join such illustrious scientists as Willard Libby, Harold Urey, George Eastman, Willard Dow and Carl S. Marvel as a recipient.

Presentation of the medal will be at our 50th Anniversary Meeting in Houston at the Gold Medal Banquet on May 18, 1973. I hope you will be able to attend. Because it is our 50th Anniversary celebration, all living past Gold Medalists will also be honored on that evening.

I shall look forward to hearing from you that you will be able to attend. Again, my most sincere felicitations.

Sincerely,

David W. Young

DWY:ss

Monday, December 18, 1972 (con't)

I wrote a number of letters of recommendation for John Huizenga, Victor Viola, and Mason Willrich in connection with their applications for Guggenheim Fellowships. (I wrote letters for John Rasmussen and Sam Markowitz last week.) I also wrote a letter for Bob Silva in connection with his application for a National Academy of Sciences grant to support a stay at the Institute of Physical Chemistry in Moscow and a letter supporting the application of William Dauben for faculty membership in the Bohemian Club (copy attached). I sent Harold Fidler my report on the visit of the Chinese scientific delegation (copy attached).

Kenneth Ericson came in at 11:20 a.m. for an appointment. We discussed in general the visit of the Chinese scientists and how well it went. I called Tom Pigford about the AAAS Committee on Environmental Alterations, on which he serves.

I had lunch in the lower level of the cafeteria with a group including Jim Griffin, Ray Sheline, Rasmussen, Hollander, Kienle, Poskanzer, Stephens, Diamond, Tsang, and others. This is Sheline's last day with us.

Lew Keller called me back early in the afternoon to discuss further the dates for Silva's possible visit to the Soviet Union. Keller then informed me that he has a letter from a Thomas Lanigan of Academic Press, asking for his evaluation of the need for a survey volume on the transuranium elements. Keller said that he is going to write Lanigan and tell him about Cornelius Keller's book and the revision of Katz and Seaborg, indicating that another volume is not needed.

I called Mayor Joseph Alioto at 2:20 p.m. to thank him for the scroll which he sent to the Chinese delegation and indicated that the members of the delegation had asked me to thank him. I asked if he would serve on the advisory committee for the AAAS 1974 Annual Meeting. He said he would be glad to do this and also to appear before the Meeting with an official welcome. He asked a few questions about the nature of the meeting, which I described briefly.

Eric, Suki and I took a hike to the water tank. Ron and Joan dropped in to visit Steve and have dinner with us. After, they drove him to a Heathkit place to have his stereo fixed; he spent the night with them.

Helen and I attended a reception given by the Citizens Task Force organized by Susan Watson for the Board of Directors of EBRPD. Among those we talked to were Sue, Mr. and Mrs. Fred Blumberg (Chairman of EBRPD Board), Mr. and Mrs. Howard Cogswell (member of the Board), Joseph Bort (Chairman of Task Force), Tom and Margaret Bowman, Joyce Burr and her husband, Jane Putnam, Al Baum, Mr. and Mrs. Hulet Hornbeck, Walter Schwartz, Mr. and Mrs. William Dickinson, Mr. and Mrs. Lewis Crutcher (EBRPD staff), Mary Jefferds (new EBRPD Board member), Bill Horne, and Richard Trudeau (General Manager, EBRPD). Sue Watson suggested that some Task Force members get together to do some planning toward our final report.

December 13, 1972

Mr. Tim Smith, Secretary  
Membership Committee  
Bohemian Club  
624 Taylor Street  
San Francisco, California 94102

Dear Mr. Smith:

I am writing in support of the application of Professor William G. Dauben for Faculty membership in the Bohemian Club.

I have known Bill Dauben for more than 25 years on both a social and business basis. Mrs. Seaborg and I have been close friends with Bill and Carol (Mrs. Dauben) during this time. In fact, Carol worked for me as a member of my immediate staff in the late 1940's, and the Daubens have stayed in our home, in order to assure its security, while we have been away on vacation.

Bill Dauben is a first-class scientist with a world-wide reputation in his specialty, the chemistry of natural products. He is a member of the prestigious National Academy of Sciences and has received awards in recognition of his work from the American Chemical Society. He is currently Editor-in-Chief of the journal "Organic Reactions."

Bill is a man of high integrity, intelligent and very articulate. He is very personable and mixes well with people as does his wife, Carol.

I feel confident that he will support the objectives of the Club and that he will participate in the activities of the Club when called upon.

I feel that I can enthusiastically recommend Bill Dauben for membership in the Bohemian Club.

Cordially,

Glenn T. Seaborg

GTS/ssk

December 18, 1972

Dr. Harold A. Fidler  
Director's Office  
Building 50A, Room 4133

Dear Harold:

This is to report on the visit to the Lawrence Berkeley Laboratory on December 13, 1972, of the scientific delegation from the People's Republic of China.

Enclosed are (1) names and biographical information on the Chinese members of the delegation, (2) the total Bay Area itinerary which was coordinated through my office, and (3) a list of Laboratory personnel who attended a luncheon with the delegation. The total itinerary was followed as shown almost without exception.

After a session with Vice President John A. Perkins at University Hall, I accompanied the delegation by bus to the Laboratory, where we arrived at about 10:30 a.m. Due to Professor McMillan's illness, we did not call on the Director's Office but gathered in the exhibit area of the Bevatron. I served as host, made the welcoming remarks, and described briefly the history of the Lawrence Berkeley Laboratory. I described its present composition in terms of employees, the various divisions of the Laboratory and their main functions, and the four operating accelerators in the Laboratory.

Following this, Edward J. Lofgren gave a description of the Bevatron and the proposed Bevalac, and Thomas Budinger described the biomedical program involving the Bevatron and proposed Bevalac. We then walked down to the main floor of the Bevatron building, through the control room, and on to Owen Chamberlain's area where he described his experiments.

We then boarded the bus and rode up to the Superhilac Building where we were met by Albert Ghiorso, who escorted us to the balcony level above the target end of the machine. He gave a general description of the Superhilac, pointing to its vital parts, after which we proceeded into the Conference Room where Ghiorso and I described the machine in some greater detail, using the model. We then proceeded to the machine level of the Hilac Building, where Ghiorso showed them and described briefly SASSY (Small Aperture

Harold A. Fidler

- 2 -

December 18, 1972

Separator System). Ken Hulet described the computerized apparatus for repetitive quick chemical separations which will be first used to study the chemical properties of element 104. We then proceeded along the length of the Superhilac, with Ghiorso explaining its various components, to the injector end where we showed them the two injectors and the control room.

We boarded the bus again at noon and proceeded to the cafeteria for luncheon with Laboratory personnel in the lower level. As you know, this was a fairly informal social affair. At 1:30 the delegation was brought to the Conference Room in the Nuclear Chemistry Building (70A) where the members relaxed by themselves until the departure at 2:15 for the Lawrence Hall of Science. During that period I brought them into my office for a brief presentation of gifts.

Our guests seemed to be quite interested in the two accelerators that they were shown, asking a number of rather general questions, none of which are particularly noteworthy. We described to them some of our planned experiments to look for superheavy elements and they seemed quite interested in these. They were all quite interested in the biomedical experiments and the proposed Bevalac.

Sincerely yours,

Glenn T. Seaborg

Enclosures

Tuesday, December 19, 1972 - Berkeley

Helen drove in to LBL in order to have both cars available for her and the boys to do some shopping today. President Truman is back on the critical list with kidney failure developing.

From 9:00-9:45 a.m., I met with the SuperHILAC planning group-- Ghiorso, the Alonsos, and Nurmia. Adam is now beginning to work, delivering krypton beams for the experiments of the Thompson group, the Diamond-Stephens group, and the Gutbrod group. I gave Jean Fuger a tour of the SuperHILAC and the experimental areas.

I called Therald Moeller in Arizona at 11:00 a.m. in response to his letter requesting manuscripts for the Tenth Rare Earth Research Conference (to be held at Carefree, Arizona at the end of April 1973). Since I couldn't do a manuscript, he asked for an abbreviated abstract, which I said I would send.

I called Len Nugent at Oak Ridge at 11:45 a.m. regarding his letter of November 17 in which he pursued the possibility of his working at LBL on a sabbatical leave from ORNL from September 1973 to September 1974. I told him that we were under severe budget stringencies and that we couldn't give him an answer now on our ability to pay his salary in the manner suggested in his letter. I said that Hyde and I will talk to him about this at the time of the meeting of the Division of Nuclear Chemistry and Technology at Newport Beach at the end of January 1973. This was agreeable to Nugent and he suggested that if we didn't have definite word by then, he could wait even longer into the spring for a final answer. He said that he would like to visit LBL after the Newport Beach meeting and give a seminar, and we set the date of Monday, February 5, for this.

I had lunch at the lower level of the cafeteria with a group including David Shirley and many of those present yesterday. The Apollo XVII astronauts landed safely in the Pacific Ocean this afternoon.

I called Edwin H. Land and William Hewlett to ask if they would serve on the AAAS Board of Directors if asked. Land indicated that he could not because of other commitments. Hewlett felt that he could not take on this added responsibility (he said that people in the company are already complaining about the time he spends on the East Coast). I also asked Hewlett if he would consider serving as local co-chairman with me of the 1974 Annual Meeting. He suggested that we get together after the first of the year to discuss this.

F. S. Rowland called me from Irvine at 3:40 p.m. to confirm the arrangements for my speaking at the American Chemical Society Division of Nuclear and Chemistry and Technology meeting in January. I dropped by to see Liljenzin and Kratz. They are continuing to follow the decay curves of the Au, Pt group elements formed in their last bombardment of uranium with argon ions.

I wrote to Helen Marie Swanson, expressing Helen's and my concern about the fire she and Elmer had in their attic and to report on our family's Christmas plans.

Helen drove me home. Eric, Suki and I took a hike to the water tank. Dave and Eric went to the Oakland Coliseum Arena after dinner to see the Boston Celtics-Golden State Warriors basketball game. The Warriors scored an upset win, 115-112. Dianne and the boys decorated our Christmas tree during the evening.

Wednesday, December 20, 1972 - Berkeley

Helen drove me to work so that both cars would be available to the family for Christmas shopping.

I called Patrick Haggerty to ask if he would serve on the AAAS Board of Directors if asked. He asked for some time to think about it; I gave him my home phone where he could reach me before Christmas night.

From 11:00-11:30 a.m., I met with Victor Perevia Crespo, now Director of Higher Education, Ministry of Education, Lisbon, Portugal, who worked in our nuclear chemistry group (starting as my student) from 1957 to 1961. It was largely a social visit and we talked about my visit to Lisbon in September 1969 and to Africa in January 1970 (while Crespo was Rector of the University of Mozambique).

Stewart Udall returned a telephone call to me at 11:30 a.m. I invited him to see Huckleberry Trail while he is here on January 10-13. He indicated that he would like to do this and thinks he will have time and will be back in touch when his schedule is more firm.

I had lunch in the cafeteria with John Holdren, Tom Everhart and Jack Hollander. Holdren will probably be offered a faculty position on the campus to help coordinate work on energy and the environment. I was favorably impressed by his good balance of views. On the breeder, he favors development work, but would want to see solutions to waste disposal and safety problems before its introduction into the energy-producing economy.

A little after 2:00 p.m., I went up to the HILAC Building to attend the annual Christmas party in the conference room following punch and refreshments in the area outside the conference room. The room was packed with people working on the SuperHILAC, some of their wives, and people from neighboring buildings. Ghiorso spoke first about the general status of the SuperHILAC, funding problems, etc. After a few remarks by Ken Mirk, I spoke, opening with the story of Steve's desire to be either a physicist or a garbage man, describing the visit of the Chinese scientists, explaining the reason for our budget stringency, emphasizing our good position at the SuperHILAC because of the recognized importance of heavy ion research, and ending on an optimistic note concerning the future of our own research program.

I wrote to William Landis, encouraging him to continue his association with CUWA in some capacity. I wrote letters--thanking them for their contributions to the success of the Chinese scientists' visit--to James Nassikas (President, Stanford Court Hotel; he is John Nassikas's cousin) and Robert G. Mondavi (President, The Robert Mondavi Winery).



Helen drove me home. Eric, Suki and I took a hike to the water tank. Dave did his Christmas shopping during the day. Steve spent the night at the home of Ron and Joan.

Thursday, December 21, 1972 - Berkeley

Helen drove me to work again. We heard over the radio that President Nixon has appointed Jim Schlesinger to be Director of CIA.

I attended the Nuclear Chemistry Division's office Christmas buffet in the conference room of Building 70A. I learned from Bernie Harvey, Dave Clark and Bill Flood about the cryogenic cyclotron for 150 Mev protons which they would like to build for the U.C. Medical School in San Francisco on a \$500,000 grant from the National Cancer Institute and the cryogenic cyclotron to be fed by the 88" cyclotron to furnish heavy ions up to neon at energies of 200-300 Mev per nucleon, costing \$2,500,000. I then went down to the campus to attend the Department of Chemistry's Christmas party in the Commons Room of Latimer Hall.

I called Jim Schlesinger to congratulate him on his appointment. He said he would rather it had been nine months later, but this is the time the President wanted. He said the fiscal 1974 budget is a disaster for the AEC but he hopes to salvage something. He will stay on to see the fiscal 1974 budget through.

I talked to Don Reardon by phone, and George Pappas dropped by, to discuss the results of their visit to Washington, during which they explored with AEC officials the proposal to reorient the Laboratory program, transferring funds from high energy physics to heavy ion research. Bob Thorne talked with Bob Hollingsworth about it, and he seemed favorably inclined, while Thorne, Reardon and Pappas variously talked with Spofford English, Daniel Miller, Enzi Derenzis, Bill Wallenmeyer, and others about the proposal, and all seemed favorably inclined. George gave me a copy of the write-ups that Thorne left with the AEC people, entitled "Short Range Plan for the Redirection of the Lawrence Berkeley Laboratory" (copy attached).

This being our last day in the office before the Lab shuts down for the Christmas holidays, I got out a huge volume of mail. I sent to Cornelius Keller the pictures he had requested, approximately corresponding to the date of the discovery of californium, and inviting him to visit LBL after the Rare Earth Conference in May 1973. I sent letters of thanks, for their contributions to the success of the Chinese visit, to Myrtle Hsiang, Shih-ger Chang, Jane Kingston Zoba, Beverly Benton, and Anne Keatley.

I said goodbye to Sheila, who will depart this weekend to spend the Christmas holidays in Montana.

Eric, Suki and I took a hike to the water tank. After dinner, Helen, Dave, Eric, and I went up to Ned and Mardy Robinson's at the end of Glen Road to attend a Christmas reception for neighbors. I told Ned why I am opposing horse rings, etc. in Briones Park. I told Mary Paige that I agree that she should approach Lafayette Mayor Jim Davy to let him assume the initiative on acquiring the green spots

IN STRICT CONFIDENCESHORT RANGE PLAN FOR THE REDIRECTION OF  
THE LAWRENCE BERKELEY LABORATORY

The purpose of this paper is to suggest a revised set of aims and goals for the Lawrence Berkeley Laboratory and to briefly discuss the constraints within which such goals would have to be realized, the transition problems and the immediate effects on funding and personnel.

In the current fiscal year the Laboratory has an operating budget of some \$33,000,000. 28.5 million dollars of this sum is allocated to the Physical Research Program and over 50% of this is devoted to High Energy Physics research.

The High Energy Physics program is largely basic research and the staff is recognized worldwide as having a high degree of expertise in all research activities related to high energy particle physics and, also, in the development of experimental equipment, facilities and techniques supportive to this research. This staff is supported by unique facilities and resources for the analysis and reduction of the voluminous data taken from experimental work. LBL facilities attract workers from other installations in the High Energy Physics field and LBL staff participates with SLAC, NAL and Brookhaven in the conduct of experiment on facilities at these locations; about 60% of Bevatron operations are by non-LBL user groups.

In view of the increasing demands of other physics installations, the question as to whether or not the Laboratory can survive as a viable, important and vital member of the national laboratory family must be addressed. We believe a reordering of priorities within the Laboratory is in order. An intensive internal management guidance of the Laboratory towards such goals can improve the effectiveness of the Lab and capitalize on some of the unique advantages and assets at the University of California, Berkeley campus and the Lawrence Berkeley Laboratory.

IN STRICT CONFIDENCE

XC to AG  
1/2/73

AIMS AND GOALS

The primary goal is to reestablish LBL as a viable National Laboratory and capitalize on its unique talents.

1. The Laboratory should seek to become a center for AEC research related to heavy ions. The present heavy ion program at LBL, in combination with the diversified basic research programs in particles and accelerators at the Laboratory can draw together research in many fields, including chemistry, particle physics, cosmic rays, astro-physics and biology and medicine.
2. The Laboratory should seek to develop a diversified program better geared to national goals and able to attract funding from other Federal agencies, as well as the AEC. The proximity of the Laboratory and its relationship with the many diversified talents of the University of California offer possibilities for the development of innovative programs related to energy and environment.
3. The Laboratory should seek to attain a position to exploit opportunities for advancing the competitive status of the Nation in technological areas, including those which offer possibilities for practical application in the near future. Efforts similar to those started in the materials and metallurgical research areas of the Laboratory programs should be expanded and other technology of the Laboratory should be examined for such application.
4. The Laboratory should continue to increase its participation at other high energy machine installations, such as SLAC, NAL, to maintain a nucleus of scientific expertise in accelerator design and experimentation, as the level of support for the Bevatron is decreased in three to five years.

The Laboratory must accomplish this redirection within the present funding levels now provided by the AEC. Such a transition will not only require new energetic management direction but will require the development of a viable, comprehensive, heavy ion program, supported by the AEC. It will mean decreasing the present emphasis of the Laboratory in high energy physics and the realignment of some of the staff now engaged in that work to other physics related endeavors and to other accelerator locations. The shift in scientific research from high energy physics to other areas means that no long-range programs should be developed for Bevatron use; however, to maximize the ultimate possibilities of accelerated heavy ions to effect a reasonable transition from

high energy physics to heavy ions, it is justifiable to go ahead with the Bevalac project which connects the Super Hilac machine to the Bevatron. (This project also involves certain modifications in the Bevatron itself and the construction of two bio-medical irradiation caves to utilize the heavy ion beam for the conduct of bio-medical experiments).

#### OPERATING FUNDS

Additional operating funds for the Super Hilac and for the Materials program need to be made available as soon as possible - in fact in the current year. Operating funds devoted to the Super Hilac need to be increased in 1973 by approximately \$300,000. This increase in funds would not only enable the Super Hilac to increase its operational schedule, but would also permit work to be begun on studies related to increasing the power of the Super Hilac to the 30-50 MEV range and to provide for fully-stripped ultra heavy ions for experimental use. Moderate increased funding also is needed in the Materials area to supplement a program aimed at selecting and recommending how knowledge now available can be utilized to maximize national progress in major technological fields now limited by lack of usable materials.

The following Table indicates possible levels of support in the LBL operating budget during the next three years that is consistent with the views expressed above. It is recognized that adjustments between categories will be made as the program develops. These order-of-magnitude estimates indicate the priorities and timing of transition we believe can be accomplished.

	OPERATING FUNDS				
	NOW	REV. 1973	1974	1975	1976
Total Hi Eng.	15,200	14,670	13,710	12,845	12,090
Hi Eng. Res.	6,500	6,500	6,500	6,500	6,500
Accelerator Op.	2,050	1,930	1,700	1,500	1,320
Accelerator R&D	2,400	2,250	1,980	1,740	1,530
Exper. Fac. Op.	3,250	3,050	2,700	2,375	2,100
Exper. Fac. R&D	1,000	940	830	730	640
Medium Eng.	1,650	1,650	1,650	1,650	1,650
Low Eng.	270	270	270	270	270
Math.	125	125	125	125	125
Total Chem.	9,925	10,225	10,885	11,450	11,905
Chem. R&D	5,610	5,510	5,510	5,410	5,410
Hilac	1,740	2,040	2,700	3,265	3,720
88"	930	1,030	1,030	1,130	1,130
Inorganic Chem.	830	830	830	830	830
Radiation Isotope	815	815	815	815	815
Materials	1,700	1,830	2,130	2,430	2,730
Bio. Med.	4,119	4,120	4,120	4,120	4,120
Nuc. Ed.	48	48	48	48	48
Information	6	6	6	6	6
	33,043	32,944	<sup>1/</sup> 32,944	32,944	32,944

*see L. Rame & D. Kowalski  
\* Funds shown as  
an expenditure of  
presentation. In view  
of Double-Beam  
Heavy ion operation*

1/ The FY 1973 LBL Financial Plan would be reduced \$100,000.

It is recommended that Bevatron Operations, Experimental Facilities Operations, Accelerator R&D and Experimental Facilities R&D be reduced this fiscal year and successive decreases be applied in subsequent years.

Consideration should be given to an immediate reduction of Bevatron shifts and to a stretch cut of experimental facilities operation. Critical consideration should be given to Bevatron related development and improvements projects such as the extractions system, improvement of the reliability and flexibility and increased power and cooling apparatus of the complex.

Activities related to the electron ring, super-conductivity and PEP should be examined as to their present level of effort. Data reduction and analysis similarly should be examined.

Lastly, research projects both in high energy physics and in chemistry should be reviewed; some reallocation in the chemistry research program is probably in order. Also, when the bio-medical caves become available to utilize high ion beams, the program should be reoriented toward application activities--but within the budget level.

#### CAPITAL FUNDS

In addition to the Bevalac funding, LBL 1973 capital funds are in excess of \$3.5 million; of the equipment fund of \$2.0 million, \$450,000 is allocated to High Energy Physics. SAN recommends a 10% per year reduction of the High Energy Physics allocation over the next several years and the reallocation of this reduction to the Super Hilac area.

The A.I.P. funds of \$575,000 include \$350,000 for the Bevatron Kaon Stopping Beam. Since this project is well on the way to completion, SAN recommends no change in present allocation. In future years it would be expected that a larger proportion of available funds be directed to the Heavy Ion program.

General Plant Projects funding of \$1.0 million is heavily oriented to safety-related items except for \$185,000 for the ERA project.

Overall, SAN believes that a level of capital funding in the order of \$3.5 million will continue to be required for LBL with progressively less funds directed to High Energy Physics program and more to new program areas.

IN STRICT CONFIDENCE

ALTERNATE SHORT-RANGE PLAN  
FOR REDUCTION OF LBL

In the event additional capital funds for the Bevalac cannot be secured in 1974 and if the present level of operating and capital funds can be secured, an alternative plan for reorientation of the Lab might be considered. That plan would reduce operating expenses in 1974 by \$2 million (the amount equal to the Bevalac capital fund requirements). We believe that construction of the Bevalac is an extremely important cornerstone in an enlarged Heavy Ion program at LBL and that the Milac - Bevalac - Bevatron machine provides a versatile and significant asset to a diversified program at LBL.

This plan would apply successive reductions to the current level of funding for High Energy Physics of 3.5% in 1973; 7% in 1974; 5% in 1975; 7% in 1976. In addition to providing savings equal to the cost of the Bevalac in 1974, reductions in other years in High Energy Physics would be applied to the Heavy Ion program and to a modest expansion of the Materials work.

If taken at the first of the year, the reduction in 1974 would probably require staff reductions of between 120 and 150 people. Cumulatively over the 3½ years, the reduction in High Energy Physics would be on the order of a 30% reduction, from \$15.2 million to a level of \$10.7 million. This scheme would keep the Bevatron in operation, although at a much reduced level (about \$4.0 million per year versus \$5.7 million per year in 1973) and would maintain reduced capability for accelerator research and development and experimental facilities research and development, both important assets of the Laboratory. The following table shows the proposed reductions and additions in more detail. (It should be recognized that these levels, especially for future years, are approximate only and are intended to show trends rather than finite amounts.)

IN STRICT CONFIDENCE

XC to AG  
1/2/73

OPERATING FUNDS					
	NOW	REV. 1973	1974	1975 <sup>1/</sup>	1976
Total High Eng.	15,200	14,670	12,170	11,560	10,750
Hi Eng. Res.	6,500	6,500	5,390	5,120	4,760
Accelerator Op.	2,050	1,930	1,600	1,520	1,410
Accelerator R&D	2,400	2,250	1,870	1,780	1,650
Exper. Fac. Op.	3,250	3,050	2,530	2,400	2,230
Exper. Fac. R&D	1,000	940	780	740	700
Medium Eng.	1,650	1,650	1,650	1,650	1,650
Low Eng.	270	270	270	270	270
Math.	125	125	125	125	125
Total Chem.	9,925	10,225	10,525	10,985	11,495
Chem. R&D	5,610	5,510	5,510	5,410	5,410
Hilac	1,740	2,040	2,340	2,800	3,310
88"	930	1,030	1,030	1,130	1,130
Inorganic Chem.	830	830	830	830	830
Radiation Isotope	815	815	815	815	815
Materials	1,700	1,830	1,980	2,130	2,430
Bio Med.	4,119	4,120	4,120	4,120	4,120
Nuc. Ed.	48	48	48	48	48
Information	6	6	6	6	6
	33,043	32,944	<sup>1/</sup> 30,894	<sup>2/</sup> 30,894	30,894

<sup>1/</sup> The FY 1973 LBL Financial Plan would be reduced \$100,000

<sup>2/</sup> The 1974 LBL Financial Plan would be reduced \$2,050,000 to obtain the Bevalac



along Mount Diablo Boulevard now that the committee that we had organized for this purpose has ceased to be active.

Friday, December 22, 1972 - Lafayette

I helped Helen get our house in order for our guests. After lunch, Suki and I took a hike in Briones; we hiked up over Black Oak Knob to Lagoon Peak, on down to Briones Valley Road and back to our starting point at the Motor Vehicle Barricade.

Helen drove to the San Francisco Airport to meet Shirley and Al Badain, arriving on a flight from New York, gave them a short sight-seeing tour of San Francisco, then drove them to our home, where they will be our houseguests over the holidays.

After my hike, I cut the grass cover in our backyard and our back and front lawns. Eric spent a good part of the day cutting down the dead walnut trees in our front yard using a rented chain saw.

Saturday, December 23, 1972 - Lafayette

After watching the first half of the Oakland Raiders-Pittsburgh Steelers football game on TV, Al, Eric and I drove to Candlestick Park, listening to the game on the radio. The Steelers won during the last few seconds, 13-7. Dave, who joined us at Candlestick, watched the entire game on TV at a bar on Third Street. We saw the San Francisco 49ers-Dallas Cowboys football game, which Dallas won during the last minute, 30-28. This was a sad day!

Lynne, Bill, Jody, and her fiance Peter Biermann, arrived from Moline, Illinois (where they spent last Wednesday night with Bill and Jody's mother and stepfather) at about 6:00 p.m. They had made the trip in three driving days, spending two nights in motels along the way. Bill and Peter were sick with the flu, so they went right to bed. The rest of us all had dinner together.

Sunday, December 24, 1972 - Lafayette

We watched on TV the Washington Redskins-Green Bay Packers football game; the Redskins won, 16-3. We also watched the Miami Dolphins-Cleveland Browns game; the Dolphins won, 20-14. I cut a good part of the grass on our field.

We had a typical family Swedish Christmas Eve dinner--potato sausage, rice, etc. After this, we opened our presents--all participated except Lynne who was suffering from the flu. Bill, Jody and Peter were feeling somewhat better. I took movies and recorded on the Sony cassette tape recorder at dinner and present opening.

Monday, December 25, 1972 - Lafayette

We had our traditional opening of Christmas presents from Santa Claus as we got up in the morning. I cut some grass in our field in the morning. I did some playing with our tape recorder set up in the afternoon.

We had a total of 16 for Christmas dinner, which we had starting at 6:30 p.m. Present were Peter's parents, Professor and Mrs. Ludwig Biermann (an astrophysicist and discoverer of the solar wind); Peter's sister Sabine and her husband of six months, Francesco Sardei (Italian-German, a plasma physicist on a year's fellowship at IBM in Palo Alto); Peter Biermann (an astrophysicist like his father); Jody Cobb, Bill and Lynne, Dave, Steve, Eric, Dianne, Helen and me, and Shirley and Al Badain. We all ate in our dining room which was packed to capacity. After eating, we called Pete and Jane in Washington, who had just returned home from Christmas dinner at a friend's home.

Tuesday, December 26, 1972 - Lafayette - Washington

Soon after arising at 5:55 a.m., I heard over the radio that President Truman had died in Kansas City at 7:50 a.m. (5:50 a.m. Pacific time). Helen drove me to the San Francisco Airport, where I boarded TWA Flight No. 64, leaving at 9:00 a.m. and arriving at Dulles Airport at 4:30 p.m. Sharing a taxi with Mr. and Mrs. Julius Duscha and their two daughters--all returning from spending the Christmas holidays in San Francisco to be near their son Steve who works at the Berkeley Gazette--I dropped them off at their Maryland home and rode to Harrison Street. Here I had a delayed Christmas dinner--turkey and all the trimmings, cooked by Jane--with Pete and Jane. After dinner, they opened the presents from the family that I had brought from home. They had a nice Christmas tree, with decorations and lights.

Wednesday, December 27, 1972 - Washington

I took a taxi to the Sheraton Park Hotel to attend a breakfast meeting of the AAAS Board of Directors in the Mina Rees-William Bevan suite. We adopted the budget and discussed possible industrial engineers as candidates (and means of appointment) for a possible vacancy on the Board. We also discussed the apparent plans of SESPA to disrupt the AAAS meeting now in progress and means of preventing this. Present at the meeting were Mina Rees, Chairman, Lewis Branscomb, William Golden, Caryl P. Haskins, Richard Bolt, Phyllis Parkins, Ward Goodenough, Leonard Rieser, and William Bevan and Catherine Borrás (minutes attached).

We then went down to the Park Ballroom, for the Scheduled informal meeting of the AAAS Council to discuss the new Bylaws. I presided. At the request of Professor E. W. Pfeiffer of the University of Montana, I called attention to available leaflets, with text composed by George Wald of Harvard University, protesting the renewed bombing of North Vietnam. I then suggested that the meeting become a committee of the whole with President-Elect Leonard Rieser in the chair, in view of his expertise on the Bylaws, and this was moved and carried.

Rieser then took the chair and conducted a discussion of the Bylaws. About 75 Council members were present. The meeting went very well, with a number of interesting and helpful suggestions offered. I spoke in opposition to Dr. Pigman, who suggested that the President-Elect not serve as Chairman of the Committee on Council Affairs; his point of view lost overwhelmingly.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE  
1515 Massachusetts Avenue, N.W.  
Washington, D. C., 20005

301 Board Meeting  
Dec 72 355a

Approved

Minutes of the Meeting of the  
Board of Directors  
Sheraton Park Hotel  
Washington, D. C.

December 27, 1972

Present: Mina Rees, Chairman, Richard H. Bolt, Lewis M. Branscomb,  
William T. Golden, Ward H. Goodenough, Caryl P. Haskins,  
Phyllis V. Parkins, Leonard M. Rieser, Glenn T. Seaborg,  
William Bevan

Absent: David Blackwell, Barry Commoner, and Daniel P. Moynihan

MINUTES

The meeting began at 8:00 A.M.

1. Budget. The Board VOTED to approve the revised budget for 1973 as presented by the Executive Officer. Suggestions were made that in future years program budgeting procedures be instituted. The Executive Officer observed that this had been his intention for some months, but implementation waits on the appointment of a controller.
2. Election of New Chairman-Elect. As chairman-elect of Section B (Physics), the Board elected Dr. Solomon J. Buchsbaum, Executive Director, Research, Communications Sciences Division, Bell Telephone Labs, Murray Hill, New Jersey.
3. Constitutional Amendments. The Board approved the following amendments to the new constitution for presentation to Council.  

Article IV: Delete the words "and of the Committee on Nominations" in the first sentence of Section 1.

Article VI: Insert the words "as prescribed in the Bylaws" at the end of the second sentence of the second paragraph of Section 1.
4. Arden House. Arrangements were made for members of the Arden House Planning Committee to meet during the course of the Washington meeting.

\* \* \* \* \*

The meeting adjourned at 9:00 A.M.

William Bevan

January 10, 1973

I had lunch in The Pavilion Room with Rieser, Bevan and Bolt to discuss numerous AAAS matters. After lunch, I joined Stan and Renee Schneider at their table. We chatted and they offered their car for Pete and me to drive to Kennedy Stadium to pick up our Redskins-Cowboys Playoff tickets later today. While we were at lunch, the police arrested five SESPA members (who resisted) because they persisted in maintaining a table in the AAAS registration area in violation of AAAS rules.

I went to the Vinson Room to attend the meeting of the Committee on Council Affairs. We discussed the resolutions that have been offered for possible action in next Saturday's meeting of the Council. President-Elect Rieser presided and a number of committee members (Newell, Goodenough, Singer, others) and interested AAAS members were present. After about two hours of statements by AAAS members, the Committee met and made decisions on which resolutions to present to the Council on Saturday. I learned that the Arden House is not available for our October meeting--we may use Sterling Forest, near New York City, or go to Williamsburg, Virginia.

After this meeting, I met Pete in the hotel lobby at 5:00 p.m. and walked with him to the Shoreham Motor Hotel parking lot, where we met Stan Schneider who gave us the keys to his Mercury. Pete and I drove to Kennedy Stadium and picked up four tickets to next Sunday's playoff game (our regular season ticket seats). We drove back to the Psychiatric Institute where we picked up Jane (working the 4:00 p.m. to midnight shift), and, after Pete changed clothes we went to a reception at the National Academy of Sciences Building given by Harrison Brown for Simao Mathias of Brazil. Also present were Dr. and Mrs. Athelstan Spilhaus, Dr. Victor Urquidi, Paul Martin, Dr. and Mrs. Alan Nixon, and Dr. Leonard Rieser. Simao Mathias and I discussed plans for creating an International Association for the Advancement of Science and for increasing cooperation between AAAS and its Brazilian counterpart.

Pete and I then drove the Schneiders's car back to the Shoreham Motor Hotel parking lot, walked to the Sheraton Park Hotel, returned the keys to the Schneiders, had a bite to eat in the Minute Chef restaurant in the Hotel, and took a taxi home to Harrison Street.

Thursday, December 28, 1972 - Washington - Rockville

I took a taxi to the Sheraton Park Hotel where I had breakfast in The Pavilion with Rees, Rieser, Goodenough, Branscomb, Bolt, and Bevan. We discussed planning for the Arden House Conference (for considering the changed future of AAAS) to be held next October and today's symposium "AAAS Looks to the Future (Arden House Hearing)."

After breakfast I went to the Park Ballroom to attend the symposium. Rieser served as chairman. Alan C. Nixon spoke on "Implications of Populist Movements for Professional Societies" in which he traced the history of changes in the American Chemical Society that led to his presidency and his plans for the future of ACS; he called for a similar program of professional enhancement in the AAAS. Next, Earl Callen (American University) spoke on "The Legitimacy of Social Concerns as a Professional Society Focus," using

Thursday, December 28, 1972 (con't)

recent events in the American Physical Society in the social field as his focus. The next speaker was Congressman Mike McCormack, who spoke on "How the Technical and Scientific Professions Can Be of Service to Government;" he is the only scientist in Congress and called for scientists to help brief members of Congress on scientific matters and for scientists to enter politics.

Next, Gerald Holton spoke on "New Roles of the Professional Society in Communicating with the Public;" he suggested that the views of AAAS be represented routinely in hearings on bills before Congress. Finally, N. Jay Demerath, III (University of Massachusetts, a graduate student at Berkeley while I was Chancellor) spoke on "Changing Roles and Competing Priorities in the Professional Society of the Future;" he emphasized the importance of societies in backstopping universities. After these formal presentations, the last hour or so in this morning session was devoted to general discussion from the floor based on the presentations. I met Franz H. Rathmann, President-Elect of the Association of State Academies of Science (and a member of the faculty of North Dakota State University).

I met George H. Milly, President of GEOMET, Inc. at the front door of the Sheraton Park Hotel and rode with him, stopping for lunch at The Rib on the Rockville Pike, to the GEOMET headquarters building in Rockville. Here I met in Milly's office with a number of key management people of GEOMET who briefed me on the operations of GEOMET. The people present and the agenda are listed on the attached introductory briefing. Some of the instrumentation of Kevex may be useful to Billy Weaver in his work on air quality measurements at National Airport. Dick Allen described the growing relationship between GEOMET subsidiary American Health Systems, Inc. (San Francisco) and the El Segundo, California operation (information systems) of Xerox Corporation. J. H. Gardiner's presentation included a description of GEOMET's recently acquired Sitelines, Inc., a producer of acoustic windows of high efficiency and (now) profitability. In the uranium exploration, described by J. T. MacWaters, I learned that they are discussing financing with the French company Societe Nicole. Regarding finances, C. I. Judkins said GEOMET earnings are growing to a projected \$300,000 to \$800,000 on sales of \$5,000,000 to \$11,000,000 in calendar 1973, exclusive of GEOMET Mining.

After the briefing, I discussed with Judkins the options for my stock acquisition as a member of the GEOMET Board of Directors. We agreed that I would receive from GEOMET 1,000 (out of a possible 4,000) shares of stock during 1972 and will sign a letter expressing my acceptance to serve of the Board of Directors also during 1972. I will have to pay income tax on my 1,000 shares, the value of which will be determined by Judkins.

I rode home with Dick Allen and D. B. Hill. I offered Allen a ticket to the playoff game, which he was glad to accept. He is a good friend of Tom and Joan (my cousin) Yolken.

I changed into my tuxedo, took a taxi to the Sheraton Park Hotel, and went to the Assembly Room to attend a reception preceding the

## GEOMET, Incorporated

Introductory Briefing for Dr. Glenn T. Seaborg

*Thursday 28*  
 Friday, ~~29~~ December 1972

AGENDA

1. Introduction.....Dr. G. H. Milly
2. Office of Technical Studies.....Dr. D. B. Hill
  - a. Health Systems Programs - *Dale Thomas*  
~~Dr. L. S. Poenki~~
  - b. Social Systems Programs - Mrs. J. H. Langston
  - c. Environmental Management Programs - Mr. B. D. Weaver
3. Office of Experimental Development.....Dr. G. H. Milly  
 (for Dr. D. J. Sibbett  
*not present*)
4. Health Services Programs.....Mr. R. T. Allen
5. Environmental Products Programs.....Mr. J. H. Gardner
6. Natural Resources Programs.....Mr. J. T. MacWaters
7. Business Summary.....Mr. C. I. Judkins (10 MIN.)

dinner for past AAAS presidents. Among those present were Mina Rees and her husband, Dr. Leopold Brahdy, Leonard Rieser, the William Bevans, the Richard Trumbulls, the Ward Goodenoughs, the Lewis Branscombs, William Golden, Richard Bolt, Phyllis Parkins, the Caryl Haskins, the Detlev Bronks, the Athelstan Spilhauses, Albert Roehmer, Chauncey Leake, the Bentley Glasses, and the Walter Orr Robertses. There were a number of toasts and talks of reminiscence.

We then went to Sheraton Hall. There were some rumors that the session here would be disrupted by SESPA, but nothing of this sort happened. I presided over this program, beginning with a request that the audience (about 400) stand in a moment of silence in tribute to President Truman. I then announced the winners of the 1972 AAAS Awards, after which I introduced Mina Rees, who gave her Retiring AAAS President's Address, "Saga of American Universities: The Role of Science." After the conclusion of this program, we went to the Park Ballroom next door for a general reception. Here I talked to Boris Pregel, who wants to meet with me on my next trip to New York to discuss a proposed international meeting planned for April 1974. I also had an excellent opportunity to talk to Stan and Renee Schneider.

Friday, December 29, 1972 - Washington - Vienna, Virginia

I took a taxi to the Sheraton Park Hotel to attend a breakfast in the Senate Room with members of the AAAS Youth Council and the AAAS Board of Directors. The Board members present were Mina Rees, Ward Goodenough, Lewis Branscomb, and Bill Golden. I sat at a table with Dr. Bernard Gifford, head of the New York City Rand Institute, William Reyerson of Population Institute, John Burmeister, and Virginia Harbut of the University of Georgia. Bernard Gifford told us about the interesting work of his Institute on scientific planning for New York City and he will send me information on this--he was supported in his graduate work by an AEC fellowship and received a letter from me in this connection.

After breakfast, I took a taxi, with Rieser, Reyerson and A. Buzzati-Traverso (Assistant Director General for Science, UNESCO, Paris) to the Washington Hilton Hotel where I attended the symposium, "Science in the United Nations," in the International Ballroom-West. This was presided over by Leonard Rieser and consisted of talks by Herman Pollack (Director, Bureau of International Scientific and Technological Affairs, U.S. Department of State) on "Introduction--Scientific and Technical Activities of U.N.," Victor Urquidi (President, El Colegio de Mexico, Guanajuato, Mexico, and Chairman, Advisory Committee on Application of Science and Technology to Development, United Nations) on "The Role of Science in U.N. Development Activities," Martin Kaplan (Chief, Office of Science and Technology, World Health Organization, Geneva) on "The Role of Science in a Specialized Agency," and Thomas F. Malone (Dean, Graduate School, University of Connecticut, and Deputy Foreign Secretary, National Academy of Sciences) on "The Problem of the Environment Contribution to the Solution."

After a short intermission, the speakers were joined by Guy B. Gresford (Director, Office of Science and Technology, United Nations, New York) and Eugene Skolnikoff (Director, Center for Inter-

Friday, December 29, 1972 (con't)

national Studies, Massachusetts Institute of Technology) in a round table discussion, "What Can the U.N. Do Most Effectively in Science?"

Following this, I went to the Farragut Room for a lunch hosted by Leonard Rieser and me for a group interested in international science. The group consisted of Arthur K. Solomon (Professor of Biophysics, Harvard Medical School), Victor Urquidi, Martin Kaplan, Thomas F. Malone, A. Buzzati-Traverso, Victor Weisskopf (M.I.T.), Harrison Brown, John Fobes (Deputy Director General, UNESCO), James M. Harrison, and William Bevan. Rieser and I described our plans for AAAS in international activities. We spoke of creating a federation of national associations of science as a prelude to the formation of a true International Association of Science.

Following lunch, I took a taxi to the BOAC Building where I went up to the 10th floor offices of Coudert Brothers law firm. Here I met in the office of Sol Linowitz with him and Glenn E. Penisten, President and Chief Executive Officer of DATRAN (Data Transmission Company). They described for me the proposed operations and plans of DATRAN. On the Board of Directors are Sam Wyly (Chairman of the Board of University Computing Company [UCC], the source of funds for DATRAN), Charles Wyly (President of UCC), Dean Thornton of UCC; and Penisten and Harry Bowles (Chief Finance Officer of DATRAN); and public members Linowitz, Erwin Canham (publisher or editor of Christian Science Monitor), and Robert Strauss (Chairman of the Democratic National Committee). DATRAN will have its computer data national computer network built by 1975 at a cost of about \$140 million, and this should be profitable (including completion of amortization of original cost) at a rate of about \$100 million a year by about 1980 and then will go up fast. I told them that I would accept membership on the DATRAN Board and suggested I would like to visit its headquarters this afternoon for a briefing. Penisten was delighted by this and phoned his office in Vienna, Virginia to make the arrangements.

I then rode with Penisten to the DATRAN headquarters; on the way he reviewed for me the arrangements for my directorship--\$6,000 per year plus \$700 for each meeting I attended (six scheduled per year) and the right to buy 1,000 shares of stock at \$10 per share. I can buy the stocks on a promissory note at 6% interest and can't dispose of them (while they are non-registered) before two years after I have paid up the note. However, they may go public before long, in which case my stocks become registered (if they ride along with the public issue), in which case I can dispose of my stock without this time restriction. They will be worth \$25 a share immediately upon purchase and should go to a higher value at the time of public issue. The public issue of stock (possibly including purchase of some \$10 million worth by Nippon Electric Company in Japan) may be used to raise some \$30-50 million to help make up the required \$140 million. The Board meetings are held from 10:00 a.m. to about 1:30 p.m. on the third Wednesday as follows for 1973: March 21, May 16, July 18 (important review meeting), September 19, November 14, and December 13 (annual planning meeting). My starting date on the Board will be January 1.



When we arrived at DATRAN headquarters we went to the conference room where I was briefed, with the aid of charts, from 4:20-6:10 p.m. by the following key staff members: Glenn E. Penisten, Edward A. Berg (Senior Vice President and Chief Operations Officer), John M. Scorce (Corporate Secretary and Chief Regulatory Officer), Daniel R. Young (Vice President, Administration and Legal), Allen R. Worley (Acting Development Officer), Seymour Joffe (Senior Vice President and Chief Marketing Officer). I was very favorably impressed by the prospects for DATRAN.

After the briefings, Penisten drove me to Harrison Street where I had dinner with Jane and Pete. Here I found a letter drafted for my signature by Judkins of GEOMET, dated today, which I signed, accepting membership on the Board of GEOMET. My receipt of 1,000 shares of GEOMET stock (as partial compensation for joining) will be dated December 29, 1972 so that I can pay 1972 income tax on them. The remaining 3,000 shares will be received later.

Saturday, December 30, 1972 - Washington

I had breakfast at home, then took a bus to the Sheraton Park Hotel and went to the Park Ballroom, where I presided over the Annual Meeting of the AAAS Council (agenda and minutes attached). I announced the election of Roger Revelle as President-Elect and Richard Bolt and Emilio Daddario as members of the Board of Directors and some other appointments, routine business, etc. and then turned to Leonard Rieser, who presided over the discussion of the new Bylaws.

The Committee on Council Affairs had a sandwich lunch in Rieser's suite, going over the suggested changes in the Bylaws and approving the introduction of an anti-bombing (Vietnam) resolution--such approval is necessary in order to introduce any resolution not submitted thirty days in advance, and this resolution was not submitted until this morning. Present were Leonard Rieser, Ward Goodenough, Garrett Hardin, Homer Newell, George Spurgel, Jr., and William Bevan.

I presided in the afternoon session of the Meeting of the AAAS Council, over the adoption of the Bylaws, then asked Rieser, in his role as Chairman of the Committee on Council Affairs, to preside over the adoption of resolutions. The anti-bombing resolution was adopted by a vote of 80-40, along with the endorsement of Senate Bill S-3084 (Vietnam War Ecological Assessment), a resolution against including the theory of creation in science textbooks, and an appeal for conservation of nonhuman primates. I then presided over a session on "New Business," where a resolution requiring that we return to our previous policy of allowing free reign to SESPA was defeated 120-2. The members of the Council were obviously pleased with the success of our restrictions on SESPA in maintaining order in our annual meeting for the first time in four years.

After the Council meeting, I talked to William Bevan and Howard Greyber about the position of local Chairman of the 1974 San Francisco AAAS Annual Meeting. I agreed to serve with the understanding that AAAS will provide a secretary or administrative assistant (at a total cost of about \$10,000 to be paid directly to the person by AAAS, perhaps starting on a half-time basis and increasing to three-quarter

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE  
1515 Massachusetts Avenue, N.W.  
Washington, D. C., 20005

Chairman's Agenda

Meeting of the AAAS Council

Park Room  
Sheraton Park Hotel  
Washington, D. C.

9:00 A.M., December 30, 1972

2:00 P.M., December 30, 1972

Presiding: Glenn T. Seaborg, President

Note: Council members who have indicated their intention to attend are being sent admission cards for the morning and afternoon sessions. Members who plan to attend the informal meeting on December 27 (9:00 A.M., Park Room, Sheraton Park Hotel) have been sent cards for that meeting. At each session, please present the appropriate card at the door.

In accordance with the motion adopted by the Council at its 1971 meeting, members are requested not to smoke at Council sessions.

-----

The name of the person responsible for presenting each item is given in capital letters. The material--such as this--marked off by vertical lines does not appear on the agenda distributed to Council members.

-----

1. MINA REES. Combined report of the Chairman of the Board of Directors and the Executive Officer. Copies are enclosed.
2. WILLIAM BEVAN. Presentation of the 1972 Budget Adopted by the Board of Directors.

Copies will be distributed at the meeting.

3. Elections.

- (a) GLENN SEABORG. Report by the Committee on Nominations and Elections of the persons elected by the membership at large as President-Elect and members of the Board of Directors. Vote by the Executive Officer, as authorized by the Council, for those persons.

- 2 -

The full slate presented to the membership follows. Counting of the ballots will be completed on December 28. Dr. Bevan will inform Dr. Seaborg of the results.

President-Elect (one to be elected)

Roger Revelle, Richard Saltonstall Professor of Population Policy and Director, Center for Population Studies, Harvard

Kenneth V. Thimann, Professor of Biology, Crown College, University of California, Santa Cruz

Board of Directors (two to be elected)

Richard H. Bolt, Chairman of the Board of Bolt, Beranek and Newman, Inc.

Emilio Q. Daddario, Senior Partner, Daddario, Slitt, Jacobs and Sullivan; Senior Vice President, Gulf and Western Precision Engineering Company

Dixy Lee Ray, Member, U.S. Atomic Energy Commission

Warren M. Washington, Research Scientist, National Center for Atmospheric Research

After announcing which of the above candidates have been selected by the membership, Dr. Seaborg should request Dr. Bevan to legitimize the election by casting his vote for those persons. (The Council, by a vote of 385 to 15, delivered their proxies to Dr. Bevan for this purpose. The Council ballots will be available at the meeting.)

- (b) GLENN SEABORG. Report by the Committee on Nominations and Elections of the persons elected by Council as members of the Committee on Council Affairs.

The three new members are:

Dorothy E. Bliss, Curator of Invertebrates, Department of Living Invertebrates, American Museum of Natural History

Edward Creutz, Assistant Director of Research, National Science Foundation

George Sprugel, Jr., Chief, Illinois Natural History Survey

- (c) LEONARD RIESER. Report by the Committee on Council Affairs of persons elected by the Council as members of the Committee on Nominations and Elections.

- 3 -

The two new members are:

Dorothy E. Bliss, Curator of Invertebrates, Department of Living Invertebrates, American Museum of Natural History

T. C. Byerly, Assistant Director, Science and Education, U.S. Department of Agriculture

- (d) GLENN SEABORG. Report by the Presiding Officer of the election of chairmen and chairmen-elect of sections by the Council and of Council's authorization to the Board to elect additional chairmen and chairmen-elect. (A complete list will be mailed with minutes of the meeting.)

By mail ballot, Council voted to elect the chairmen and chairmen-elect who had been nominated by the sections and to authorize the Board of Directors to elect officers for those sections which had not submitted nominations in time for inclusion on the mail ballot.

- (e) GLENN SEABORG. Report by the Presiding Officer of the one-year extension of the terms of several section secretaries and the appointment by the Board of Directors of three new section secretaries.

One-year reappointments (through 1973) of present section secretaries

Section A (Mathematics): F. A. Ficken, New York University

Section C (Chemistry): Leo Schubert, American University

Section I (Psychology): William D. Garvey, Johns Hopkins University

Section N (Medical Sciences): F. Douglas Lawrason, University of Texas Southwestern Med. Sch.

Section O (Agriculture): Michael A. Farrell, State College, Pa.

Section P (Industrial Science): Jordan Lewis, Battelle Development Corp.

Section W (Atmospheric and Hydrospheric Sciences): Louis J. Battan, University of Arizona

Appointment of new section secretaries

Section E (Geology and Geography): Ramon E. Bisque, Colorado School of Mines (1973-76)

- 4 -

Section L (History and  
Philosophy of Science: Dudley Shapere, University of  
Illinois (1973)

Section M (Engineering): C. Towner French, P. R. Mallory  
Co. (1973)

(f) GLENN SEABORG. New committeemen-at-large of the sections  
elected by the section committees. (A complete list will be  
mailed with minutes of the meeting.)

4. GLENN SEABORG. Reports of Committees and Commissions. Reports of  
the following are enclosed.

Arid Lands  
Environmental Alterations  
Industry, Technology, and Society  
Minorities in Science  
Publications  
Public Understanding of Science  
Science Education  
Science in the Promotion of Human Welfare  
Support of Scientific Research  
Youth Council

5. LEONARD RIESER. Report of the Committee on Council Affairs.

- (a) Report of Council's vote on the designation of the Scientific  
Manpower Commission as a AAAS Participating Organization.

The vote was: in favor, 295; against, 23.

- (b) The Committee on Council Affairs recommends adoption of the  
following amendments to the new Constitution (see page 6 of  
the enclosed AAAS Bulletin for November).

Article IV, Section 1, first sentence: Delete the words  
"and of the Committee on Nominations."

Article VI, Section 1, second paragraph: Insert at the  
end of the second sentence the words "as prescribed in  
the Bylaws."

Note: An error appears in the Constitution as printed in  
the Bulletin. In Article XI on Dissolution, line 7 from  
the bottom, the words "shall be disposed of" should be  
inserted after the first word ("of") in the line.

Adoption of the above amendments requires a two-thirds  
vote.

Upon adoption of the Bylaws, Article XII of the Constitu-  
tion will go out of existence.

- 5 -

- (c) The Committee on Council Affairs recommends adoption of the proposed Bylaws as printed in the AAAS Bulletin for November (enclosed), with whatever modifications it may wish to introduce at the meeting as a result of Council's discussion of the Bylaws on December 27. A list of proposed changes will be distributed at the meeting.

Present proposed changes.

Adoption of the Bylaws requires a majority vote.

- (d) Resolutions submitted at least 30 days in advance of the meeting are enclosed. The Committee on Council Affairs will conduct hearings on these resolutions on December 27 at 2:00 P.M. in the Vinson Room of the Sheraton Park Hotel. Its recommendations will be reported at the meeting.

Report Committee's recommendations.

6. GLENN SEABORG. New Business.

Call for new business, if any.

William Bevan

December 21, 1972

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE  
1515 Massachusetts Avenue, N.W.  
Washington, D. C., 20005

Minutes of the  
Meeting of the AAAS Council,  
Washington, D. C.  
December 30, 1972

---

Council met on December 30, 1972, in the Park Room of the Sheraton Park Hotel in Washington, D. C. The morning session began at 9:15 A.M. and concluded at 12:00; there were 210 members in attendance. The afternoon session began at 2:15 P.M. and concluded at 4:00 P.M. There were 173 members in attendance. President Glenn T. Seaborg presided at both sessions.

---

MINUTES

1. Agenda Item 1. Combined report of the Chairman of the Board of Directors and the Executive Officer. The report was distributed with the meeting agenda.
2. Agenda Item 2. Presentation of the 1973 Budget Adopted by the Board of Directors. A summary of the 1973 budget was distributed at the meeting; the full budget will be published in the Proceedings Issue of Science (23 February).
3. Agenda Item 3. Elections.

(a) The Committee on Nominations and Elections reported that preference for the following as officers had been expressed by a polling of AAAS members. Some 35,500 members returned ballots.

President-Elect

Roger Revelle, Richard Saltonstall Professor of Population Policy and Director, Center for Population Studies, Harvard University

Board of Directors

Richard H. Bolt, Chairman of the Board of Bolt, Beranek and Newman, Inc. (for a second term)

Emilio Q. Daddario, Senior Partner, Daddario, Slitt, Jacobs and Sullivan; Senior Vice President, Gulf and Western Precision Engineering Company

- 2 -

By mail ballot (385 to 15), members of Council had earlier delivered their proxies to the Executive Officer so that he might elect the officers chosen by the membership. He cast his vote for the persons named above.

(b) The Committee on Nominations and Elections reported that Council had elected the following persons as members of the Committee on Council Affairs.

Dorothy E. Bliss, Curator of Invertebrates, Department of Living Invertebrates, American Museum of Natural History

Edward Creutz, Assistant Director of Research, National Science Foundation

George Sprugel, Jr., Chief, Illinois Natural History Survey  
(reelected)

(c) The Committee on Council Affairs reported that Council had elected the following persons as members of the Committee on Nominations and Elections.

Dorothy E. Bliss, Curator of Invertebrates, Department of Living Invertebrates, American Museum of Natural History

T. C. Byerly, Assistant Director, Science and Education, U.S. Department of Agriculture

(d) The President reported that Council, by mail ballot, had voted to elect the section chairmen and chairmen-elect previously nominated by the section committees and to authorize the Board of Directors to elect officers for those sections which had not submitted nominations in time for inclusion on the mail ballot. A complete list of section chairmen and chairmen-elect will be published in the 23 February issue of Science.

(e) The Board of Directors reported that it had extended by one year the terms of several section secretaries and had appointed three new section secretaries, as follows:

One-year reappointments (through 1973) of present section secretaries

Section A (Mathematics): F. A. Ficken, New York University

Section C (Chemistry): Leo Schubert, American University

Section I (Psychology): William D. Garvey, Johns Hopkins University

Section N (Medical Sciences): F. Douglas Lawrason, University of Texas Southwestern Med. Sch.



- 3 -

Section O (Agriculture): Michael A. Farrell, State College,  
Pennsylvania

Section P (Industrial Science): Jordan Lewis, Battelle  
Development Corporation

Section W (Atmospheric and  
Hydrospheric Sciences): Louis J. Battan, University of  
Arizona

Appointment of new section secretaries

Section E (Geology and Geography): Ramon E. Bisque, Colorado  
School of Mines (1973-76)

Section L (History and  
Philosophy of Science): Dudley Shapere, University of Illinois  
(1973)

Section M (Engineering): C. Towner French, P. R. Mallory Company  
(1973)

(f) The President announced that Council would be informed by mail of the new members-at-large elected by the section committees. A list is enclosed.

4. Agenda Item 4. Reports of Committees and Commissions. Reports of the following were distributed with the agenda.

Arid Lands  
Environmental Alterations  
Industry, Technology, and Society  
Minorities in Science  
Publications  
Public Understanding of Science  
Science Education  
Science in the Promotion of Human Welfare  
Support of Scientific Research  
Youth Council

5. Agenda Item 5. Report of the Committee on Council Affairs.

(a) Scientific Manpower Commission. Dr. Leonard M. Rieser, Chairman of the Committee on Council Affairs, reported that Council, by a mail ballot of 295 to 23, had designated the Scientific Manpower Commission as a AAAS Participating Organization.

(b) Constitution. Dr. Rieser reported that the Committee on Council Affairs and the Board of Directors recommended adoption of the following amendments to the new Constitution approved by Council at its December 1971 meeting:

- 4 -

Article IV, Section 1, first sentence: Delete the words "and of the Committee on Nominations."

Article VI, Section 1, second paragraph: Insert at the end of the second sentence the words "as prescribed in the Bylaws."

By unanimous vote, Council adopted the above amendments.

A third amendment was introduced from the floor: in Article VII, Section 2, delete "and" before "(d) at least two delegates from the Association of Academies of Science," change the period to a comma, and add "and (e) one delegate from each Regional Division." Council voted to adopt this amendment.

Note: An error appeared in the Constitution as printed in the AAAS Bulletin for November 1972. In Article XI on Dissolution, line 7 from the bottom, the words "shall be disposed of" should be inserted after the first word, "of," in the line.

(c) Bylaws. Dr. Rieser reported that the Committee on Council Affairs wished to propose changes in the Bylaws as published in the November AAAS Bulletin (a list was distributed at the meeting) and moved the adoption of the Bylaws with those changes, some of which the Committee was recommending in response to the Council's informal discussion on December 27. Council then resolved itself into a committee of the whole for further discussion of the Bylaws, during the course of which straw votes were taken on the following questions:

1. Should a section committee have the right to veto a request from an affiliate to enroll in its section? (Council voted yes.)

2. Should a Section X-General be established to receive affiliates not accepted by other sections? (Council voted yes.)

3. Should affiliates be restricted to voting representation on a single section committee? (Council voted yes; subsequently it was pointed out that the real issue was whether or not more than one section committee representative of an affiliate should be eligible for election as the Council delegate of a section committee.)

4. Should the terms of section officers expire at the conclusion of the annual meeting rather than on January 1? (Council voted yes.)

Two additional questions were raised from the floor, but straw votes were not taken: (1) Should each section have its own constitution and bylaws? (2) Should section secretaries be ex officio Council members?

During the recess between the morning and afternoon sessions, the Committee on Council Affairs met to consider whether or not it wished to modify the list of changes distributed at the morning session. At the beginning of the afternoon session, Dr. Rieser reported that the

Committee recommended two further revisions, the addition of the words underlined below in revised Section 3 of Article I and the addition of a new Article XVII (to be in effect temporarily). The complete list of changes, thus modified, follows.

Article I, Section 3

Delete the Section as printed in the AAAS Bulletin and substitute the following:

Each Affiliate may enroll in up to five Sections of the Association, subject to the approval of the respective Section Committees, including that of Section X-General, with the exception that Affiliates which are not enrolled in any of the other Sections will be enrolled in Section X-General. An Affiliate may name a representative to the Section Committee of each Section in which it is enrolled; such representatives must be Members of the Association.

At three-year intervals, the Executive Officer shall communicate with all Affiliates to assure that they wish to continue their affiliation. If an Affiliate replies in the negative or fails to reply in due course, disaffiliation shall be automatic and the term(s) of its Section Committee representative(s) shall expire simultaneously with the lapse of affiliation.

Article II, Section 1

In the second line, change "twenty" to "twenty-one."

Article III, Section 1

Delete the second sentence and substitute the following:

A Member who wishes to enroll in more than one Section must designate one as his or her Electorate.

Add a 21st Section to the list of Sections: Section X-General.

Article III, Section 2 (b)

Delete the last sentence, beginning, "Upon approval by the Board," and substitute the following:

A Section Committee may arrange meetings to be held at places and times other than those of Association meetings, but may not incur financial obligation without prior approval of the Board.

Article III, Section 2 (c)

In lines 8 and 16, omit the word "Committee" after "Section."

Article V, Section 3 (a)

Delete the Section as printed and substitute the following:

Each Electorate shall have a Nominating Committee which shall at appropriate intervals present to the members of the Electorate for election by mail ballot slates of nominees for the following positions:

- (i) Council delegates of the Electorate
- (ii) Members of the Electorate's Nominating Committee
- (iii) Section Chairman-Elect
- (iv) Member-at-large of the Section Committee

At least two nominations shall be presented for each position to be filled. A Nominating Committee shall not renominate a Council delegate who is completing two consecutive terms or a retiring member of the Nominating Committee.

Article V, Section 4

Change the title of the Section to "Annual Election Procedures of the Electorates." Delete the Section as printed and substitute the following:

In an annual election, slates bearing at least two nominations for each of the following positions which is to be filled shall be presented to the members of each Electorate for election by mail ballot:

- (a) Council delegates of the Electorate
- (b) Members of the Electorate's Nominating Committee
- (c) Section Chairman-Elect
- (d) Member-at-large of the Section Committee

Nominations for these positions shall be presented to each Electorate by its Nominating Committee /see Section 3 (a) of this Article/.

Information concerning the nominees for these positions shall be issued to the members of each Electorate at least sixty days in advance of the issuance of ballots. Additional names may be placed in nomination for any of these positions by petition of at least fifty members of an Electorate submitted to the Executive Officer within forty-five days following such issuance of information.

- 7 -

Article VII, Section 3

Delete the Section as printed and substitute the following:

Within sixty days of the occurrence of any vacancy in an elective position on the Board, the Board shall fill the vacancy for the remainder of the unexpired term.

Article XII, Section 1 (c)

In line 3, add ", Yukon, Northwest Territories," after "Alaska."

Article XIII, Section 2

Delete the Section and Section title as printed and substitute the following:

The Participating Organizations are:

- (a) the Gordon Research Conferences (designated in 1955);
- (b) the Scientific Manpower Commission (designated in 1972).

Add the following new article:

Article XVII

These Bylaws shall go into effect on January 15, 1973, with the exception that the present Council of the Association shall continue to serve until the new Council can be established and convened. The Board of Directors and the Committee on Council Affairs, as appropriate, shall be responsible for implementing these Bylaws.

Note: To facilitate conversion of the Association's present addressing system to computer, letter designations of four sections have been changed, as follows:

- Section on Biological Sciences (from "FG" to "G")
- Section on Psychology (from "I" to "J")
- Section on Dentistry (from "Nd" to "R")
- Section on Pharmaceutical Sciences (from "Np" to "S")

Adoption of the new Bylaws, as modified by the above revisions, was moved and seconded.

Two motions were introduced from the floor: (1) that Section Secretaries be exempted from the limitation of two consecutive terms on the Council; (2) that only one Section Committee representative of an Affiliate be eligible for election as the Council delegate of a Section Committee. Both motions lost.

With one dissenting vote, Council then adopted the new Bylaws as modified by the revisions given on pages 5-7 of these minutes. With the adoption of the Bylaws, Article XII of the Constitution went out of existence. Finally, Council voted its appreciation to the members of the Committee on Council Affairs for their excellent work.

(d) Resolutions. Dr. Rieser reported that five resolutions had been submitted to the Committee on Council Affairs at least 30 days in advance of the Council meeting and had been mailed with the agenda; three additional resolutions were presented to the Committee at its hearing on December 27. The disposition of each of the eight follows.

Resolutions Submitted at Least  
30 Days in Advance

1. Population Research. The Committee on Council Affairs had revised the resolution and recommended its adoption in the following form:

WHEREAS the Commission on Population Growth and the American Future, after a careful and thorough two-year investigation of population growth and distribution in the United States, which included the varied problems associated with human reproduction, and the social, behavioral, and economic aspects of human population dynamics, recommended substantial increases in the support of scientific research in these areas, and

WHEREAS the Commission on Population Growth and the American Future also recommended the establishment, within the National Institutes of Health, of a National Institute of Population Sciences to provide an adequate institutional framework for implementing a greatly expanded program of population research, and

WHEREAS major support for existing research in the population sciences is authorized in the Family Planning Services and Population Research Act of 1970 (P.L. 91-572), which expires on June 30, 1973, and which should be renewed and expanded,

NOW BE IT THEREFORE RESOLVED THAT the American Association for the Advancement of Science supports and endorses the recommendations of the Commission on Population Growth and the American Future that the federal government and private philanthropy increase funding for population sciences research, and that consideration be given to providing a more adequate institutional framework for implementing a greatly expanded biomedical and social science research program on human population problems, possibly by establishing, within the National Institutes of Health, a National Institute of Population Sciences.

Council voted to adopt this resolution with one change, the insertion of "President's" before "Commission on Population Growth and the American Future" in the first sentence of the final paragraph, and to refer it to the Board for whatever action it might consider appropriate.

2. Child Care at AAAS Meetings. After considering this resolution at its November meeting, the Committee on Council Affairs referred it to the Board of Directors. The Board asked the staff to study the feasibility of arranging for child-care facilities at the San Francisco meeting, taking into consideration questions of cost, legal liability, and the health and welfare of children who would be cared for in such facilities.

3. Assessment of the Ecological Consequences of the Vietnam War (earlier entitled Science in the Promotion of Human Welfare). The Committee on Council Affairs had revised the resolution and recommended its adoption in the following form.

WHEREAS the Board of the AAAS in October 1969 issued a statement which reads in part as follows: "...for the coming decade the main thrust of AAAS attention and resources shall be dedicated to a major increase in the scale and effectiveness of its work on the chief contemporary problems concerning the mutual relations of science, technology, and social change, including the uses of science and technology in the promotion of human welfare," and

WHEREAS United States science and technology have had profound and often destructive effects on human welfare in Indochina, and

WHEREAS scientists and the public at large should have a full scientific assessment of the constructive as well as destructive applications of American science in Indochina as proposed in a bill (S-3084) introduced by Senator Gaylord Nelson and Representative G. Gude, calling upon the National Academy of Sciences to report on the ecological effects of U.S. activities in Vietnam, Laos, and Cambodia,

THEREFORE BE IT RESOLVED that the AAAS endorses the purposes of Senate Bill S-3084 entitled the "Vietnam War Ecological Assessment Act of 1972."

Council voted to adopt this resolution without change. Subsequently the resolution was released to the press with the insertion of "Damage" between "Ecological" and "Assessment" in the final paragraph, in order to give the full title of Senate Bill S-3084.

4. 1925 Geneva Protocol on Chemical and Biological Warfare. The Committee on Council Affairs recommended against adoption on the grounds that it was uncertain about: (a) the meaning of "weapons" as used in the Geneva Protocol; (b) the implications of the United Nations' 1969 resolution; (c) why herbicides and tear gas are mentioned specifically but chemical weapons such as napalm are not; and (d) why the U.S. Senate had not ratified the Geneva Protocol between 1925 and 1969.

5. Meeting Facilities for SESPA. The Committee on Council Affairs recommended against adoption on the ground that the issue raised could not appropriately be dealt with by adoption of a resolution.

Resolutions Submitted on December 27

6. Inclusion of the Theory of Creation in Science Curricula (submitted by the Section Committee of the Section on Anthropology). The Committee on Council Affairs had revised the resolution and recommended its adoption in the following form:

WHEREAS some State Boards of Education have required or are considering requiring inclusion of the theory of creation as an alternative to evolutionary theory in discussions of the origins of life, and

WHEREAS the theory of creation is neither scientifically grounded nor capable of performing the roles required of scientific theories, and

WHEREAS the requirement that it be included in textbooks as an alternative to evolutionary theory represents a constraint upon the freedom of the science teacher in the classroom, and

WHEREAS its inclusion also represents dictation by a lay body of what shall be considered within the corpus of a science,

THEREFORE we, the members of the Council of the American Association for the Advancement of Science, present at the annual meeting of December 1972, strongly urge that reference to the theory of creation not be required in textbooks and other classroom materials intended for use in science curricula.

Council voted to amend this resolution by: (a) adding "and State Legislatures" after "State Boards of Education" in the first paragraph; (b) inserting a comma after "theory of creation" in the final paragraph and adding "which is neither scientifically grounded nor capable of performing the roles required of scientific theories,..."; (c) deleting "we, the members of the Council of" and "present at the annual meeting of December 1972" and changing "urge" to "urges" in the last paragraph; and (d) deleting the second paragraph and substituting "the theory of creation" for "it" in the third paragraph. Council voted to adopt the resolution as amended.

7. Disclosure of Sources of Information (submitted by Dr. Richard N. Adams). This resolution urged that scientists called upon to testify in court not be required to reveal sources of information which they deem to be confidential. It was the view of the Committee on Council Affairs that the issue was one of crucial importance but that more might be accomplished by referring the matter to the AAAS Committee on Scientific Freedom and Responsibility than by adopting a resolution.

8. Conservation of Nonhuman Primates (submitted by the Section Committee of the Section on Anthropology). The Committee on Council Affairs had revised the resolution and recommended its adoption in the following form:



- 11 -

The Council of the AAAS, composed of scientists of many disciplines:

- being aware of the unique value of nonhuman primates as man's closest relatives and as models serving the biological and medical sciences in the advancement of human health, welfare, and knowledge;
- being aware of their responsibility to preserve the existence of the whole spectrum of contemporary primate species;
- being aware that expanding human populations and the growing exploitation of nonhuman primates and their habitats have threatened some species and sub-species with extinction while others have become drastically reduced,
- in order to ensure the survival of all primates and their natural habitats for posterity and the benefit of mankind,

URGENTLY SUBMIT to International and National Organizations the appeal that scientists be selective in the usage of nonhuman primates and that governments contribute to the conservation needs of nonhuman primates by all feasible means.

Council voted to adopt this resolution without change.

Dr. Rieser then reported that Drs. Richard I. Ford, Bernice A. Kaplan, Betty J. Meggers, Everett I. Mendelsohn, E. W. Pfeiffer, James Silverberg, and Philleo Nash wished to present for Council's consideration an emergency resolution urging cessation of hostilities in Vietnam. It follows:

On December 30, 1972, at its Annual Meeting, the Council of the American Association for the Advancement of Science condemns the United States' continued participation in the war in Vietnam, its covert military actions in Laos, Cambodia, and Thailand, and the havoc it has brought to the people and the land of Indochina, heightened in the post-election bombing escalation.

As scientists we cannot remain silent while the richest and most powerful nation of the twentieth century uses the resources of modern science to intervene destructively in the problems of poor and distant lands. Our Association objective "to increase public understanding and appreciation of the importance and promise of the methods of science in human progress" compels us to refute the view that scientists and engineers are responsible for and endorse, by their actions or by their silent consent, the wanton destruction of man's environment, in this case through warfare.

The Council of AAAS urges an immediate cessation of hostilities and an immediate withdrawal of all U.S. armed forces from Vietnam, Laos, Cambodia, and Thailand.

The Council requests the AAAS Executive Board to give this motion full news media publicity at once.

- 12 -

Council agreed to consider the resolution and voted to amend it by: (a) deleting "its covert military actions in Laos, Cambodia and Thailand, and the havoc it has brought to the people and the land of Indochina," in the first paragraph; (b) substituting "silence" for "silent consent" and "man and his environment" for "man's environment" in the last sentence of the second paragraph; (c) inserting "and" before "Cambodia" and deleting "and Thailand" in the third paragraph; and (d) deleting the final paragraph.

By a vote of 80 to 41, Council adopted the resolution as amended.

6. Agenda Item 6. New Business. Three motions were introduced:

1. That the Board of Directors reexamine its current practices and administration of the annual meetings, prior to the San Francisco, 1974, meeting, to see if meetings cannot better meet the needs of the attendees and the individual societies. The motion carried.

2. That the Association continue to print the program of the annual meeting on recycled paper and consider using recycled paper for stationery. The motion carried.

3. That at future meetings of the Association there be no restriction on the manner or the locations in which literature may be distributed. The motion lost.

In reply to an inquiry concerning the delay in publication of the report of the Herbicide Assessment Commission, the Executive Officer informed the Council that the author, Dr. Matthew Meselson, had not yet completed the report and did not expect to be able to do so before the summer of 1973.

-----  
The meeting adjourned at 4:00 P.M.

William Bevan

January 17, 1973

or full time) and the understanding that Greyber will take responsibility for setting up a finance subcommittee, probably under the chairmanship of Reddington of San Francisco. Greyber will also arrange to send a letter to William Hewlett, signed by Bevan, Rieser and me, asking him to serve with me as Co-Chairman. Greyber said that Dr. Bernard Oliver of Hewlett-Packard is a good man to assist Bill Hewlett in this role. Greyber will also check with Sheila and me concerning the letters he will send to the Advisory Committee to inform them of the February 6 meeting.

I had dinner downtown and saw a movie.

Sunday, December 31, 1972 - Washington - Lafayette

I had breakfast at home, spent the morning reading, and watched the Miami Dolphins-Pittsburgh Steelers AFC championship game on TV; the Dolphins won, 21-17.

At 1:00 p.m., Dick Allen came by and Pete, Jane and I rode with him to JFK Stadium where we saw the NFC championship game between the Washington Redskins and the Dallas Cowboys. The Redskins won 26-3 in a game they dominated completely--a historic day for Washington. The crowd went completely wild.

After the game, Allen drove me to National Airport where I boarded United Airlines Flight No. 667. He then drove Pete and Jane home; they will fly to San Francisco tomorrow. I left Washington at 7:20 p.m. and arrived at Oakland Airport, via Chicago, at 11:20 p.m. Eric met me and drove me home, where I joined in our living room, hearing the New Year in on the radio with our traditional family toasts, Helen, Dianne, Earl and Lucile Beling (Bill's stepfather and mother, who arrived today), Jody Cobb and Peter Biermann, and Jody's friends, Erika Robin and Kim Patterson. Steve was with Joan and Ron; Dave was at a party in San Francisco of Hammarskjold people. Steve and Nancy Cobb (Bill's brother and sister-in-law), who had arrived on Thursday, had already retired. Earl and Lucile left to spend the night in a Walnut Creek motel.

INDEX--NOVEMBER, 1971 - DECEMBER, 1972

Aaron, Hank 166  
 Abbadessa, John 152  
 Abbott, Beverly 7  
 Abbott, Mitchell 150  
 Abed, Ursula 52  
 Abel, Robert 67  
 Abelson, Philip 19, 23, 38, 48, 74, 80, 110, 133, 152, 154, 212, 338  
 Abrahams, Melvin 262, 276  
 Abramson, Michael 84  
 Abramson, Ricky 273, 275  
 Abravanel, Maurice 173  
 Ackerman, Edward 312, 285  
 Adler, Peter 37, 38  
 Adolfsson, Bengt 249, 252  
 Adolfsson, Britta 249, 252  
 Adolfsson, Eva 252  
 Adolfsson, Gosta 249, 252  
 Adolfsson, Irene 249, 252  
 Adolfsson, Jenny 212, 227, 249, 252, 253, 263  
 Adolfsson, Karl 212, 227, 249, 252, 253, 263  
 Adolfsson, Lena 249, 252  
 Agnew, Harold 141, 194, 272  
 Agosti, Jan 66  
 Ahrenkeil, Chr. F. 305  
 Ahrens, Helmut 214, 228, 230  
 Ahumada, Maria 127  
 Ajzenberg-Selove, Fay 110  
 Akol, Danny 151  
 Akol, Kem 1  
 Akol, Leyla 10  
 Alba Andrade, Fernando 128  
 Albaugh, Edrey 311, 315  
 Albaugh, Fred 311, 315  
 Alcindor, Lew 134  
 Alder, Bernard 20, 265  
 Aldrich, Daniel 79, 92, 108, 109  
 Aler, Bo 248, 249, 250, 251  
 Alexander, Cherie 36, 221, 265, 267, 272, 278, 298  
 Alexander, Clifford 187, 287  
 Alexander, Marjorie 195  
 Alexander, Richard 209  
 Alexander, Robert 13, 258  
 Alexander, Scott 80, 85, 151, 180, 185, 187, 322  
 Alexander, Thomas 13, 258  
 Alimarin, I. 235  
 Alioto, Joseph 335, 347, 350  
 Alitto, Guy 342, 347  
 Allen, G. 108  
 Allen, Richard 312, 357, 361  
 Allison, Stuart 175  
 Aloia, Hank 172  
 Alonso, Carol 41, 43, 47, 61, 73, 148, 159, 174, 184, 191, 204,  
 211, 217, 258, 279, 285, 299, 305, 318, 324, 334, 351  
 Alonso, Jose 41, 43, 47, 61, 73, 148, 159, 174, 184, 191, 193, 200,  
 204, 211, 217, 258, 263, 279, 285, 299, 300, 318, 324, 334, 351

Alvarez, Luis 50, 123, 176, 190, 293, 338, 343, 346  
Ambush, Charles 1  
Anderson 71  
Anderson, Anna 255  
Anderson, Clinton 46, 272  
Anderson, J. L. 80  
Anderson, Jack 68  
Anderson, John 326  
Anderson, Kinsey 293, 326  
Anderson, Martin 278  
Anderson, Robert 330  
Anderson, Roger 300  
Andes, Daniel 324  
Andrade, Fernando 111  
Andrews, Lawrence 150, 151  
Angert, Norbert 229  
Apt, Kenneth 139  
Arbatov, G. A. 213, 237, 243, 266  
Arbuckle, John 56  
Archer, Joseph 7, 151  
Arkley, Rodney 258  
Armbruster, Bruce 60, 61, 76  
Armbruster, Peter 95, 228, 230, 256, 259, 279  
Armijo, Robert 27, 28, 31, 34  
Armor, David 35  
Arnold, James 89, 90, 325  
Artobolevskii, Ivan 239  
Asaro, Frank 26, 49, 61, 123, 164, 168, 193, 199, 271  
Ash, Roy 328  
Ashton, Mary 136  
Asprey, Larned 50, 138, 141, 192, 231  
Asprey, Marge 141  
Astin, Allen 39, 109, 154, 313  
Atlas, Sheldon 288, 293  
Atterling, Hugo 193, 197  
Aumann, Dieter 92  
Averett, John 203  
Averett, Lynne 203  
Avery, W. H. 227  
Axelrod, David 66, 69  
Mystö, Juha 187  
Azevedo, Larry 119  
Babcock, Gerry 42  
Baca, Ernest 169  
Bacchetti, Ray 30  
Bachman, William 273  
Bäcklin, Eric 249  
Bäcklin, Tora 249  
Bacon, Kevin 150  
Badain, Al 134, 354, 355  
Badain, Shirley Rubenstein 12, 74, 134, 312, 354, 355  
Badham, Robert 2, 6  
Baez, Albert 109, 186  
Baget, Julian 184  
Bahn, Lawrence 196  
Baird, Barbara 164, 175

Baird, Richard 66  
Baker, Lois 87  
Baker, R. D. 141  
Baker, William 125, 317  
Balagna, John 139  
Baldeschwieler, John 289, 297  
Baldrich, Michael 65  
Balestrini, Silvio 139  
Ball, Leslie 72  
Ballock, Eugene 261  
Ballou, Clinton 324, 345  
Balog, Susan 139  
Balzhiser, Richard 311, 315  
Banks, Elijah 161, 332  
Banks, Robert 129  
Bannerman, James 54  
Barach, Arnold 68  
Baranowski, Frank 326  
Barashenkov, V. S. 244  
Barbachano, Bee 44  
Barbachano, Mimi 44  
Barbanel, Yu. A. 236  
Barber, Buzz 331  
Barker, Horace 123  
Barkle, John 175  
Barnes, Howard 175, 341  
Barr, Don 139  
Barre, Henry 173  
Barrera, Alfredo 129, 130  
Barrett, Rosemary 83  
Bartle, H. R. 172  
Bartlett, Neil 163, 215, 235, 291, 329, 345  
Basil, Owen 66  
Bassham, James 160, 266, 306  
Batchelder, Augustus 4  
Bates, Jack 116  
Bates, John 9  
Bates, Thomas 333  
Batzel, Roger 9, 25, 180, 194, 219, 264, 266  
Bauer 64  
Baum, Alvin 119, 183, 200, 201, 214, 225, 272, 331, 336, 350  
Baybarz, Russell 51, 55, 113, 192, 232, 236, 241  
Beadle, George 125, 317, 318  
Bear, David 301  
Beatty, Thomas 77  
Beaumont, Gary 24  
Becchetti, Fred 284  
Bechhoefer, Bernhard 213  
Beck, Cliff 115  
Beck, Theodore 78  
Beedle, Lynn 39  
Behnke, Wallace 341  
Beling, Earl 361  
Beling, Lucile 361  
Bellis, J. L. 43  
Bellquist, Eric 303

Belov, V. Z. 236, 237, 244  
Bender, Paul 326  
Benedict, Manson 303  
Benjamin, Stan 314  
Benjegerdes, Robert 104  
Bennett, Edward 166, 191, 211, 221  
Bennett, Ivan 45  
Benson, Dirk 171  
Benson, Lucy 134, 186, 287, 340  
Benson, Stephen 327  
Bentley, Donald 331  
Bentley, Elizabeth 331  
Benton, Beverly 353  
Berg, Edward 360  
Bergen, Julius 35  
Berger, Rene 244  
Bergstrom, Ingmar 286  
Beringer, Robert 73  
Berkowitz, William 134, 340  
Berl, Cathy 284  
Berl, Walter 19, 111, 127, 130, 138, 151, 152, 153, 155, 204, 277,  
284  
Bernhard, Carl 252, 255  
Bernstein, Larry 33, 77, 81  
Bernthal, Fred 47  
Berry, Charles 42  
Besancon, Robert 84  
Bethay, Woody 72  
Bethe, Hans 47  
Bevan, William 16, 19, 39, 74, 75, 94, 108, 109, 110, 127, 130, 152,  
153, 154, 155, 160, 165, 176, 185, 186, 204, 214, 269, 277, 288,  
289, 308, 312, 323, 338, 339, 355, 356, 358, 359, 360  
Beyer, B. J. 242  
Bhutani, S. K. 23, 273  
Biancocca 271  
Bienenstock, Arthur 338  
Biermann, Ilse 355  
Biermann, Ludwig 355  
Biermann, Peter 354, 355, 361  
Biever, Margaret 327  
Bigeleisen, Jacob 302  
Biles, Martin 326  
Binder, Irwin 270  
Binion, Jack 125  
Birdsall, Charles 44, 47, 51, 52, 53, 82, 91, 137, 142, 283  
Birdsall, Holly 66  
Birge, Raymond 123  
Bizell, Linda 17  
Bjarke, George 138  
Bjorne, Dieter 257, 279, 285, 287  
Blackwell, David 19, 55, 123, 133, 154, 288, 289, 294, 314, 324, 334,  
335, 338  
Blais, Normand 138  
  
Blaisdell, Thomas 348  
Blakstad, Michael 92, 96

Blann, Marshall 17, 47  
Blanton 71  
Bliss, Dorothy 108, 109  
Bloom, Anders 249  
Bloom, Berit 249  
Bloom, Eivor 249, 251  
Bloom, Howard 60  
Bloom, Justin 62, 69, 76, 109, 152, 155, 167, 267, 311, 315  
Bloom, Olaf 227, 249, 251  
Bloom, Per 249  
Bloomquist, Carol 112  
Blumberg, Fred 119, 143, 217, 336, 350  
Blumer, Herbert 321  
Bock, Rudolph 228, 230, 256, 259, 279, 302, 305, 307  
Bodovitz, Joseph 184  
Boesel, Richard 320  
Boettler, Emily 119  
Bogart, Nelson 14  
Bohr, Aage 122, 269  
Bohr, Neils 122  
Bolin, Jean 129  
Bolin, Judy 129  
Bolin, Richard 111, 127, 130, 277, 289  
Bolt, Richard 19, 74, 109, 110, 288, 338, 339, 355, 356, 358, 360  
Bond, Victor 42  
Bondurant, George 202  
Bonner, James 55, 80  
Bonner, John 266  
Borlaug, Norman 23, 204  
Borman, Barry 41  
Borman, Herbert 109  
Born, James 15, 54, 81, 87, 89, 102, 147, 160, 191, 266, 325, 343  
Born, Leonard 202  
Borras, Catherine 19, 74, 110, 153, 154, 176, 214, 288, 312, 324,  
338, 355  
Borrowman, Merle 44  
Bort, Joseph 183, 200, 280, 333, 336, 350  
Bouche, Nicole 151  
Bowditch, Nathaniel 340  
Bowker, Albert 1, 30, 44, 46, 49, 60, 62, 78, 81, 92, 93, 98, 107,  
123, 151, 194, 196, 206, 269, 291, 294, 298, 303, 334, 345  
Bowker, Mrs. Roy 92, 94, 346  
Bowles, Harry 359  
Bowman, David 3, 89, 267  
Bowman, Harry 193  
Bowman, Margaret 136, 199, 224, 268, 272, 332, 350  
Bowman, Thomas 272, 276, 285, 332, 350  
Bowser, Edward 64  
Boyer, Keith 141  
Boyle, Walter 291  
Braccia, Anthony 2, 60  
Bracken, Gil 275  
Bradbury, Lois 141  
Bradbury, Norris 32, 141  
Bradley, Clark 264  
Brady, Joseph 270



Brahdy, Leopold 358  
 Bramberg, Nancy 190  
 Brandenburg, Dave 281  
 Brandus, Ioan 299  
 Branscomb, Lewis 69, 74, 110, 154, 155, 288, 338, 339, 355, 356, 358,  
 358  
 Bray, Frank 9, 56, 202, 266  
 Breeke, Tor 99  
 Bremer, Arthur 126  
 Brennand, Harold 115  
 Brent 277  
 Bresee, James 270  
 Brewer, Leo 29, 54, 80, 105, 126, 136, 143, 191, 217, 266, 293, 309,  
 329, 332, 345  
 Brewer, Roger 80  
 Brezhnev, Leonid 136  
 Brian, Steve 150  
 Briscoe, William 141  
 Brisson, Frederick 172  
 Britt, Chip 47  
 Brobeck, William 147  
 Brode, Robert 21  
 Brode, Wallace 21, 39, 74, 76  
 Brodsky, Carroll 278  
 Brohult, Sven 256  
 Bromley, Allan 216, 218  
 Bronheim, David 36, 72, 134, 187, 287, 340  
 Bronk, Detlev 289, 358  
 Brooks, Herbert 183  
 Brooks, J. 108  
 Brown, Delmer 93, 152  
 Brown, Edward 144  
 Brown, Harrison 45, 186, 205, 288, 293, 356, 359  
 Brown, Howard 1, 17, 25, 47, 56  
 Brown, Kenneth 207  
 Brown, Margaret 209  
 Bruce, Charles 47, 107  
 Bruchle, W. 230  
 Bruinn, W. 230  
 Brunenkant, Ed 1, 69  
 Brunenkant, Jeanette 1  
 Bryant, Ernest 139  
 Bucher, Jerome 72, 163, 164, 177  
 Buchholz, Doral 26, 53, 166, 167, 169, 193  
 Buckner, Walker 37  
 Budinger, Thomas 160, 223, 306, 343  
 Budker, Gersh 314  
 Budnitz, Robert 221  
 Bunnett, Joseph 301  
 Bunting, John 161, 163, 164, 340  
 Burdette, Albert 151  
 Burke, Arleigh 190  
 Burke, David 36, 72, 134, 186, 287, 340  
 Burke, Helen 220  
 Burkhardt, Frederick 92  
 Burkhart, John 173

Burmeister, John 110, 338, 358  
 Burnett, John 55, 232, 238  
 Burr, Joyce 136, 142, 199, 221, 224, 282, 321, 322, 332, 350  
 Burton, Al 119  
 Bustad, Leo 286  
 Butler, Gilbert 139  
 Butler, James 74, 127, 130  
 Buxbaum, Richard 137, 213  
 Buzzati-Traverso, Adriano 358  
 Byerly, T. C. 108  
 Byers, Walter 34  
 Byrne, Milton 341  
 Cain, Jean 210  
 Caldwell, David 276  
 Caldwell, Katherine 136  
 Caldwell, Tina 295  
 Callen, Earl 356  
 Calvin, Gen 20  
 Calvin, Melvin 13, 20, 52, 54, 62, 89, 102, 103, 116, 132, 147, 160,  
 165, 191, 204, 205, 211, 212, 239, 269, 279, 289, 291, 294, 323,  
 325, 343, 345  
 Calvin, Noel 165  
 Camm, Frank 326  
 Camp, Tom 35  
 Campbell, Alan 291, 293  
 Campbell, Arthur 20, 59, 107  
 Campbell, David 82  
 Campbell, Glenn 79, 94, 306  
 Campbell, Ian 330, 348  
 Campbell, Richard 129  
 Canaday, John 9, 11, 79, 94, 298  
 Canary, Brendan 154, 155, 310, 311, 312  
 Canham, Erwin 359  
 Cann, Chris 104  
 Cantlon, John 108  
 Capra, Frank 173  
 Capron, Ruth 138  
 Capron, William 289  
 Cardinet, George 293  
 Carey, William 316  
 Carlbom, Lars 250, 252  
 Carleson, Göran 250  
 Carlson, Edward 173  
 Carlson, Thomas 55  
 Carlsson, Hilding 255  
 Carmichael, Leonard 46, 69  
 Carmichael, William 186  
 Carnall, William 164  
 Carpenter, Frederick 345  
 Carrier 115  
 Carroll, Joseph 137, 138, 141  
 Carter, Edward 79, 320, 321, 328  
 Cartter, Allan 338  
 Carven, Bob 296  
 Cason, James 55, 133, 156, 330, 335  
 Cason, Rebecca 156

Castagnola, Tom 119  
Castalani, George 333  
Castillo, Jenny 83  
Cater, Douglas 15  
Catonico, Lynne 46  
Cavell, Ronald 171  
Cernan, Eugene 337, 342, 344  
Cerny, Joseph 3, 8, 15, 31, 61, 95, 103, 106, 118, 146, 169, 182,  
188, 191, 193, 201, 216, 259, 268, 271, 282, 290, 309, 322, 329  
Chabin, Martha 139  
Chaikhorsky, L. A. 242  
Chall, Harold 298  
Chamberlain, Owen 63, 145, 169, 211, 222, 255, 283, 292, 321, 343  
Chamberlin, Ward 37  
Chan, Chun-fai 343  
Chaney, Doreta 200  
Chang, Shih-ger 329, 345, 353  
Chang Wen-yu 341, 342, 345  
Chao, Yuen 346  
Chappell, Nancy 203  
Charles, Mrs. Allan 38  
Chavan, Y. B. 273  
Chayawattanankur, K. 230  
Cheadle, Vernon 92  
Cheatham, Margo 46  
Cheit, Earl 30  
Cheney, Dorothy 49  
Chern, Shiing 288, 314, 323, 338, 343, 345  
Chesne, Andre 238  
Chew, Roland 312  
Chi, Wen-shun 346  
Chimutova, M. K. 235  
Chinn, Harvey 151, 171  
Chinn, Terry 55  
Chinowsky, William 137, 142  
Chmutova, M. K. 242  
Chollar, Robert 38  
Chou En Lai 58  
Chou Pei-yuan 315  
Christensen, Mark 46, 120, 145, 283, 287, 291, 298, 323, 338, 345  
Christofferson, Ann 199, 225  
Chudinov, E. G. 236, 238  
Chupp, Warren 276  
Cincotta, Alexandra 38  
Ciriello, Nicholas 134, 187  
Cisler, Walker 311, 314  
Claesson, Stig 255  
Clark, David 193, 196, 202, 276, 280, 282, 353  
Clark, Desmond 335  
Clark, Gerald 172  
Clark, William 155, 159  
Clarke, John 346  
Clarkson, Jack 32  
Clarkson, Patrick 203  
Clarkson, Susie 203  
Claus, George 49

Claus, Karen 49  
 Clifton, Paul 281  
 Cobb, Joanna 208, 354, 355, 361  
 Cobb, Lynne 1, 4, 8, 10, 12, 15, 17, 21, 22, 23, 24, 26, 27, 28, 28,  
 36, 39, 40, 44, 48, 49, 52, 62, 64, 76, 77, 80, 82, 85, 86, 90,  
 98, 101, 103, 105, 117, 119, 121, 125, 126, 131, 136, 142, 145,  
 147, 151, 152, 158, 163, 166, 170, 171, 174, 182, 185, 187, 188,  
 190, 195, 201, 203, 206, 207, 208, 210, 217, 219, 222, 331, 354,  
 355  
 Cobb, Nancy 361  
 Cobb, Steve 22, 23, 361  
 Cobb, William 1, 4, 8, 10, 12, 17, 21, 22, 23, 24, 26, 27, 28, 36,  
 39, 40, 44, 48, 49, 52, 62, 64, 77, 80, 82, 85, 86, 90, 98, 101,  
 105, 119, 122, 125, 131, 136, 142, 145, 147, 150, 158, 163, 166,  
 170, 171, 188, 190, 195, 201, 206, 207, 208, 210, 211, 212, 214,  
 219, 221, 222, 354, 355  
 Cobble, James 32, 47  
 Coblentz, William 78  
 Coburn, Charles 70, 71  
 Cogswell, Howard 136, 143, 297, 331, 350  
 Cohen, D. 237  
 Cohen, Jerome 226  
 Cohen, Karl 286  
 Cohen, Manuel 187  
 Cohen, Nathan 55  
 Cohn, Irene 133  
 Cohn, Karl 219  
 Cohn, Larry 67, 74, 75  
 Cole, Jonathan 110  
 Coleman, James 108  
 Coles, James 33, 45  
 Collins, Wilson 180  
 Colman, Richard 11  
 Colvig, Ray 30  
 Combatalade, Ed 281  
 Commins, Eugene 325, 330, 346  
 Commoner, Barry 19, 74  
 Compton, Dale 334  
 Conant, Jane 15  
 Conde, Henri 251  
 Connally, John 16  
 Connell, Richard 13, 23, 54, 81, 87, 89, 124, 147, 160, 163, 168,  
 191, 194, 202, 271  
 Conner, James 326  
 Connery, Camille 64, 133, 151  
 Connick, Robert 11, 321  
 Conrad, Peter 71  
 Constance, Lincoln 58  
 Content, Robert 133, 293, 335, 344  
 Conway, John 18, 33, 83, 164, 193  
 Conzett, Homer 3, 103, 193, 219, 268  
 Cook, Charles 330  
 Cook, Dale 98  
 Cook, Donald 330  
 Cook, Richard 72  
 Cooke, Lloyd 39

Cooksey, Donald 17, 98, 147  
Cooksey, Millicent 17  
Cooksey, William 317  
Cooley, Richard 202  
Coolidge, William 175  
Cooney, Joan 37  
Cooper, Fred 183, 224, 226, 333  
Cooper, John 177, 196  
Coops, Mel 25, 196  
Corbin, Douglas 282  
Corey, E. J. 125, 317  
Corlett, William 303  
Corley, Jim 53  
Corliss, William 42, 96  
Cornish, Edward 68, 110, 319  
Cort, Stewart 268  
Coryell, Charles 88  
Costa, Walter 98, 148, 171, 207, 214  
Cotton, Albert 276  
Coudert, Alexis 340  
Courtright, Hernando 173  
Cousins, Norman 2, 38, 56, 162  
Cousteau, Jacques 92, 93  
Cowan, George 97, 139, 141  
Cox, Allan 173  
Cox, Robert 206  
Craig, Norman 164  
Craig, Paul 46  
Crandall, Keith 99  
Cranston, Alan 335, 337, 347  
Crawford 255  
Crawford, David 222  
Crawford, Frederick 173  
Crawford, H. P. 198  
Crawley, Roy 316  
Crespo, Victor 352  
Creutz, Edward 50, 109  
Crewe, Al 96  
Cromer, D. T. 141  
Crosby, Kathryn 303  
Crosby, Harry 303  
Crosby, Mary Frances 303  
Crosby, Nathaniel 303  
Cross, Peter 59  
Cross, Robert 46  
Crowe, Kenneth 3, 202, 208  
Crowell, W. R. 304  
Crowle, Herbert 60  
Crowley, John 37, 100  
Crutcher, Lewis 225, 298, 331, 350  
Culler, Floyd 113  
Culliton, Barbara 75, 110  
Cummings, John 202  
Cunningham, Burris 8, 29, 51, 55, 192, 231, 235  
Cunningham, James 72, 135, 187, 287  
Cunningham, Thomas 79

Curll, Daniel 37  
Curry, Jerry 65  
Daddario, Emilio 45, 109, 360  
Dadoo, Shankar 129  
Dairiki, Janis 272  
Dairiki, Ned 272  
Daley, Richard 25  
Dalton, William 207  
Daly, Howell 133, 335  
Damien, D. 236  
Daniel, Rudy 85  
Daniels, Farrington 163  
Daniels, Olive 163  
Daniels, William 132, 139, 195, 287, 299  
Dannenberg 41, 45  
Daskarolis, Dean 202, 266  
Dauben, William 122, 345, 350  
David, Edward 67, 149, 202, 204, 205, 262  
Davis 291  
Davis, Curtis 38  
Davis, David 108, 153  
Davis, Karen 272  
Davis, Kenneth 310, 315  
Davis, Raymond 90  
Davis, Sumner 31  
Davis, William 34  
Davy, James 22, 223, 226, 353  
Day, James 37, 38  
de Alba, Edmundo 130, 289  
de Carvalho, Gilbert 276  
de Carvalho, Hervasio 276  
de Cubas, Jose 185, 186, 214, 289  
de Fremery, Donald 136, 332  
de Giantomasso, Ettore 175  
de Lange, Marion 2  
De Lucia, Linda 163, 175  
de Seversky, Alexander 172  
de Silva, Alan 66  
Dees, Bowen 39, 109, 154, 170, 313  
del Campo, Henry Martin 111, 152, 153, 277, 289  
Delacruz, Tony 199  
Delfino, Janice 224, 298  
Dellums, Ronald 335, 337, 347  
Demerath, Jay 357  
Denig, R. 230  
Dennis, John 74, 76  
Dennison, Charles 185, 186  
Denschlag, H. O. 230  
Derenzis, Enzi 353  
Deschamps, Ignacio 129  
Devell, Lennart 252  
Devine, Andy 189  
Dexter, Marilyn 322  
Deye, David 55  
Diamond, Marian 132

Diamond, Richard 8, 14, 23, 29, 31, 41, 51, 61, 81, 89, 95, 103, 106,  
123, 171, 177, 193, 199, 201, 205, 216, 219, 263, 268, 271, 276,  
282, 302, 309, 322, 325, 350  
Dickinson, William 119, 350  
Didsbury, Howard 319, 327  
Dienes, George 239  
Dietz, Ruth 204  
Dillon, Donald 184  
Dillon, Wilton 88  
Dills, Ralph 6  
Dishman, A. V. 278  
Dittner, Peter 229  
Djerassi, Carl 45  
Doerflinger, William 6, 42, 43  
Doherty, Robert 318  
Doherty, Wilfred 5, 318  
Domagala, Martin 209, 210  
Donald, Susan 132  
Donald, William 81  
Donany, V. 230  
Dondero, Marco 151  
Donnelly, Harold 326  
Donovan, Hedley 278  
Donovan, Paul 42, 43, 46  
Dornbos 71  
Doty, Paul 204  
Doub, William 38, 62, 69, 78, 87, 201, 209, 210, 218, 312  
Douglass, William 96, 147  
Downey, James 71, 72  
Doyle, Frederick 204, 212  
Draper, Murray 56  
Drath, Dana 91, 92, 142, 144  
Dratz, Edward 301  
Drayson, Sydney 110, 338  
Dregne, Harold 129, 130  
Dreher, Leonard 258  
Dreyer, Robert 107  
Druin, V. A. 245  
Drummond, William 341  
Dudley, Anna Carol 134  
Dudley, Shannon 134  
Duffield, Joan 80, 195, 317, 322, 323, 337, 349, 350, 353, 361  
Duke, Charles 101  
Dunbar, Kenneth 326  
Duncan, Irma 109  
Dupree, Hunter 75, 125  
Duran, Gonzales 128  
Duscha, Julius 18, 39, 109, 154, 313, 355  
Duscha, Steve 18, 355  
Dutton, Tom 151  
Dwyer, John 175  
Eagleton, Thomas 181, 190  
Eastburn, David 340  
Eccles, George 173  
Eccles, Marriner 173  
Echeverria, Luis 111, 127, 130, 138, 151, 152, 159, 277, 308

Eckstein, Alexander 293  
Edelstein, Norman 3, 14, 18, 31, 51, 61, 95, 103, 105, 106, 146, 160,  
163, 164, 169, 177, 188, 193, 196, 198, 199, 201, 215, 216, 223,  
227, 270, 304  
Edwards, Aaron 176  
Edwards, Jeanette 26, 27, 182, 222  
Edwards, Keith 27  
Edwards, Lucretia 136, 143, 225, 272  
Edwards, Ray 26, 27, 182  
Eggan, Fred 108  
Eichler, Bernd 245  
Eikleberry, Robert 139  
Eiland, Eileen 53, 76, 169, 193, 226, 329  
Eisenhower, Julie 271  
Eisenhower, Milton 21  
Ekberg, Göran 251  
Eklund, Nils 97  
Eklund, Sigvard 12, 49, 310  
Elberg, Sanford 82, 291  
Elioff, Tommy 202, 220, 337  
Ellender, Allen 109  
Elliott, Clayton 56  
Elliott, Richard 56  
Ellis, Glenn 197  
Emerson, Ralph 205  
Emery, Denise 342  
Emmes, Arthur 224, 336  
Eng, Dana 188  
Enger, Iz 312  
English, Spofford 154, 160, 165, 167, 169, 188, 202, 216, 259, 275,  
307, 327, 353  
Epple, Robert 29, 47, 62, 121, 167, 168, 169, 170  
Eppley, Richard 3, 47, 106  
Epstein, Michael 53  
Erickson, Jan 44  
Erickson, Richard 21, 44, 94, 199, 331, 346  
Ericson, Kenneth 301, 327, 336, 350  
Eriksson, Albert 249, 254  
Eriksson, Anna Karin 255  
Eriksson, Anna-Lisa 254  
Eriksson, Bengt 254  
Eriksson, Daniel 254  
Eriksson, Göran 254  
Eriksson, Gustav 249, 254, 255  
Eriksson, Inga-Britt 249  
Eriksson, Karl-Erik 254  
Eriksson, Kristina 254  
Eriksson, Lena 254  
Eriksson, Maria 249, 254  
Eriksson, Marit 254  
Eriksson, Marta 254  
Eriksson, Per-Erik 254  
Eriksson, Stig 254  
Erlewine, John 294, 327  
Eskola, Kari 3, 16, 35, 41, 56, 99, 148, 184, 191, 204, 211, 217, 223  
Eskola, Pirkko 3, 41, 148, 184, 191, 204, 211, 217, 223



Esposito, Phil 173  
Estrin, Norman 38  
Esty, F. R. 20  
Ettre, Leslie 227  
Etzler, Dorr 78  
Eudaley, Marian 139  
Eusslin, Richard 11  
Evans, Clint 53  
Evans, James 25  
Evans, John 90  
Evans, Ken 139  
Evans, Margaret 36, 72, 135, 187, 287, 340  
Evans, Ronald 337  
Everett, Glen 296  
Everhart, Thomas 293, 352  
Evers, Charles 162  
Evleth, Earl 300  
Eyring, Henry 108, 125, 171, 317  
Eyring, Winifred 171  
Eyssell, Gustav 37  
Eyster, Eugene 141  
Fagin, Ann 322  
Fagin, Darryl 72, 135, 187  
Fahrney, D. S. 167  
Faivre, Scott 151  
Fajans, Kasimir 121, 145, 148, 149  
Falicov, Leopoldo 287  
Faller, Jack 73  
Fava, Marcella 72, 135, 187  
Feld, Bernard 18  
Feldman, M. J. 315  
Feldman, Trudy 69  
Felt, Charlotte 50, 114  
Ferguson, Donald 55, 73, 113, 241  
Ferguson, Lloyd 109  
Fernbach, Sidney 291  
Fidler, Harold 18, 54, 81, 87, 89, 96, 102, 106, 124, 160, 161, 191,  
266, 284, 301, 306, 309, 323, 325, 343, 350  
Fields, Paul 35, 112  
Finch, Robert 13, 14  
Finck, Sanford 175  
Fine, Joel 100  
Finger, Harry 38  
Finger, Jean 8  
Fink, John 273  
Fisher, Harold 115  
Fisher, Robert 98, 332  
Fishevsky, Yuorij 202, 205, 239  
Fite, Larry 70  
Fitzgerald, Joseph 20  
Flaherty, John 262, 276, 295, 326  
Flanigan, Dennis 182  
Flanigan, Peter 202, 204  
Flatte, Stanley 176  
Fleischer, Everly 296, 297  
Fleischer, Robert 173

Flerov, G. N. 124, 130, 232, 236, 244, 248, 258, 262, 263, 275, 277,  
292, 302, 319  
Floeter, Hans 228  
Flood, William 353  
Florin, Alan 139, 141  
Florin, Kay 139, 141  
Florin, Russell 139  
Flugum, Robert 175  
Flynn, Jimmy 152  
Fobes, John 359  
Folger, H. 230  
Folkers, Karl 125, 317  
Follis, Gwinn 11, 12, 23  
Foncannon, Howard 186  
Fong, Alan 93  
Forbes, William 78  
Ford, George 139  
Forsling, Wilhelm 251  
Foster, John 124  
Foster, Kenneth 37  
Fowler, Gene 120  
Fowler, Robert 139  
Fowler, William 89, 325  
Fox, Howard 8  
Fradin, Frank 110  
Fraenkel-Conrat, Heinz 123  
Frankel, Marvin 164, 340  
Frankel, Richard 2, 6, 22, 23, 33, 145, 161, 163, 171, 176, 319  
Franklin, Barbara 340  
Franklin, N. L. 315  
Franz, G. 230  
Franz, H. 230  
Fraser, O. B. J. 227  
Frazar, M. 115  
Frazier, Kendrick 39, 109, 154, 313  
Fredericks, John 151  
Fredga, Arne 255  
Freeman, David 315  
Freeman, Fulton 127  
French, John 79  
Freund, Harry 8  
Frick, Ron 281  
Fricke, Burkhard 64, 102, 103, 105, 215, 229  
Fricken, Kay 168  
Fried, Sherman 112  
Friedman, Abraham 62, 277  
Friedman, Andy 91, 142  
Friedman, Arnold 112  
Friedman, Bruno 3  
Friedman, Herbert 109  
Friedman, Jeffrey 72, 135, 287  
Fritsch, Arnold 315  
Fritsch, Betsy 315  
Frolova, E. M. 237  
Fruge, Susan 136  
Fry, Wayne 120

Frye, Arthur 60  
 Fuger, Jean 348, 351  
 Fuhrman, Steve 342, 345  
 Fukushima, Eiichi 138  
 Fuller, Steven 314  
 Funari, John 129  
 Furth, Frederick 144  
 Gaarder, Sydney 17, 310  
 Gagosian, Earl 173  
 Galler, Sidney 289  
 Galloway, Dennis 32  
 Gangloff, Greta 180  
 Gangloff, Roland 180  
 Garberson, Jeffrey 34  
 Gardiner, Jay 312, 357  
 Gardner, David 79, 100  
 Gardner, Ken 296  
 Garn, Jake 172  
 Garrett, Roberta 322  
 Garrison, Warren 18, 162, 193, 304, 322  
 Gart, Murray 278  
 Garwin, Richard 39, 288, 293  
 Gaspar, Rhonda 316  
 Gastworth, Joseph 338  
 Gatti, Raymond 22  
 Gavin, Jack 84  
 Gayman, Patricia 335  
 Gaynor, Edmund Patrick 9  
 Gee, Marilyn 151  
 Geiger, Lawton 326  
 Geilani, Ahmed 151  
 Gelhaus, Clay 207  
 Gelling, Zelma 206, 216  
 Genessen, Barry 67  
 Gershenzon, Jonathan 66  
 Gettle, Guy 77  
 Geyelin, Henry 185  
 Ghiorso, Albert 3, 6, 9, 15, 16, 22, 23, 26, 29, 31, 32, 35, 41, 43,  
 47, 49, 56, 61, 62, 73, 79, 81, 84, 85, 88, 89, 91, 95, 99, 100,  
 103, 104, 105, 106, 116, 117, 124, 132, 138, 146, 148, 158, 167,  
 170, 174, 177, 181, 184, 188, 191, 193, 196, 198, 200, 202, 204,  
 206, 208, 210, 211, 212, 214, 215, 216, 217, 222, 224, 229, 245,  
 250, 257, 258, 259, 260, 262, 263, 266, 271, 275, 276, 277, 279,  
 281, 282, 285, 292, 299, 300, 302, 305, 306, 307, 309, 318, 322,  
 324, 325, 327, 328, 334, 343, 349, 351  
 Giauque, Robert 33  
 Giauque, William 291  
 Gibson, Walter 14  
 Giddings, Peter 209  
 Giesel, F. 121  
 Giesler, Gregg 139  
 Gifford, Bernard 358  
 Gifford, Ernest 110  
 Giger, Audrey 138  
 Gilbert, Neal 150  
 Gilcrest, Steve 151

Giles, Stephen 70  
Gilinsky, Victor 213  
Gill, Arthur 63  
Giller, Edward 67, 69, 326  
Gillette, Robert 23  
Gillis, John 291  
Gilmore, James 139  
Gilmore, Laddie 136  
Gilson, Ron 260  
Gimstedt, O. 251  
Ginkel, William 326  
Ginzton, Edward 89, 334  
Giscard d'Estaing, Olivier 340  
Giunta, Frank 169, 170, 191  
Gizon, Andree 171, 208  
Gizon, Jean 171, 208  
Glaser, Donald 343, 345  
Glass, Bentley 186, 358  
Glass, Michael 36, 72, 134, 187, 287, 340  
Gleiser, Molly 201  
Glendenning, Norman 3, 31, 52, 61, 64, 91, 95, 102, 106, 169, 188, 197, 201, 212, 216, 259, 271, 282, 299, 302  
Glenn, William 142  
Glennan, Keith 135, 315  
Glidden, Cliff 225  
Goddard, Terrence 300  
Goerlich, Cora 313, 316  
Goff, Harry 190  
Goffio, Frank 173  
Gofman, Jack 141  
Goheen, Robert 134, 187, 340  
Goldanskii, Andrew 238  
Goldanskii, Mila 238  
Goldanskii, Mira 238  
Goldanskii, Vitalii 232, 238, 239, 265, 269  
Goldberger, Marvin 226, 288, 293, 304, 315, 346, 348  
Golden, William 19, 74, 154, 288, 338, 339, 355, 358  
Goldenberg, Edie 110  
Goldhaber, Maurice 154  
Goldman, David 65  
Goldmann-Verlag, Wilhelm 43  
Goldstein, Barry 175  
Goldwasser, Ned 189  
Goll, Sally 265  
Gomberg, Sy 38  
Goodenough, Ward 74, 108, 110, 288, 312, 338, 355, 356, 358, 360  
Goodin, Vernon 266  
Goodman, Clark 317  
Gordon, Albert 20  
Gordon, Glen 260  
Gordon, Monte 340  
Gore, Albert 69, 312  
Gott, E. H. 330  
Gottlieb, Melvin 341  
Gould, Mauri 293, 344  
Gould, William 314, 315, 316, 341

Goulding, Frederick 61, 216  
Graef Fernandez, Carlos 128  
Granberg, Kenneth 226  
Grant, Allan 79  
Grant, David 204, 212  
Grant, Glen 291, 334  
Grant, Patrick 297  
Grant, Paul 100  
Gratton, Joseph 107, 192, 311  
Graves, Peter 173  
Gray, Clarence 185  
Gray, Mary 74, 338  
Grebenschikova, V. N. 242  
Green, Joseph 8  
Green, Waldeana 29  
Greene, Lawrence 72, 134, 187  
Greenfield, Stanley 63  
Greiman, William 116, 122  
Greiner, Barbara 217  
Greiner, Carson 217  
Greiner, Martin 217  
Greiner, Walter 64, 197, 198, 199, 200, 205, 208, 212, 214, 215, 217, 218, 222, 227, 229, 260, 263, 268, 279  
Grenadir, Alan 66  
Gresford, Guy 358  
Grether, Ewald 58  
Greyber, Howard 294, 300, 313, 334, 338, 360  
Griffin, James 274, 350  
Griffith, Charles 227, 340  
Grill, Gun 249  
Grill, Helen 249  
Grill, Jimmy 249  
Grimm, W. 230  
Grisham, Genevieve 139  
Gross, Norman 343  
Gross, Paul 38  
Grote, Leonard 259  
Grunder, Hermann 202  
Gueron, Jules 311  
Guillaumont, Robert 236  
Guinn, Vincent 296  
Guseva, L. I. 235, 239  
Gustafsson, Anita 249  
Gustafsson, Jan-Erik 249  
Gustafsson, Peter 249  
Gutbrod, Hans 201, 208, 256, 260, 285, 305  
Guthals, Paul 139  
Gutierrez, Enrique 173  
Gutmacher, Ralph 164  
Haas, Peter 92  
Haas, Rhoda 92  
Haas, Walter 92, 108  
Habak, Mrs. Albert 115  
Hackerman, Norman 89, 334, 348  
Hadeishi, Tetsuo 29, 164, 167, 177  
Hader, Rodney 300

Hagen, James 175  
Hagg, Gunnar 255  
Haggerty, Patrick 352  
Hahn, Otto 121  
Hahn, Roger 12, 261  
Haissinsky, Moise 242  
Halbach, Klaus 117, 177, 263  
Haldeman, Robert 13, 14  
Hale, W. H. 241  
Haley, James 165  
Hall, D. B. 141  
Hall, Jane 189  
Hall, John 50  
Hallanan, Elizabeth 175  
Halley, James 9, 202  
Hallmark, M. F. 162  
Halpern, Seymour 182  
Halstead, Gordon 304, 308  
Halverson, Suzanne 52  
Hammel, Peter 139  
Hammer, Nina 111  
Hammer, Dick 111  
Hammersley, John 170, 197  
Hammond, George 300  
Handler, Philip 38, 45, 204, 205, 243, 263  
Hanford, Butch 227  
Hann, Helen 225  
Hansen, Beth 78  
Hansen, Orval 264, 312, 316  
Hansen, Xenon 172  
Harberts, Paul 143, 221, 307  
Harbut, Virginia 358  
Harder, Eric 202  
Hardin, Garrett 108, 312, 360  
Hardy, Jerome 36, 72, 134, 187  
Hardy, Robert 65  
Hare, Nathan 65  
Harless, Donald 39, 109, 154, 313, 321, 331  
Harrar, George 94, 134, 187, 287, 340  
Harretche, Beatrix 153  
Harris, Charles 59  
Harris, Frank 236  
Harris, James 22, 148, 150, 181, 193, 222, 299  
Harris, John 107  
Harris, Linda 74, 76  
Harris, Milton 38, 39, 109, 154, 227, 313, 321  
Harris, Phil 189, 190  
Harrison, James 359  
Hart, James 12, 79, 190, 346  
Hart, Michael 17  
Hart, Robert 326  
Harte, John 212  
Hartley, Andrew 288, 289, 310  
Hartman, Bill 207  
Hartsfield, Jack 70  
Hartsough, Walter 202

Harvey, Bernard 3, 15, 31, 43, 47, 54, 61, 89, 95, 103, 106, 118,  
 146, 188, 196, 201, 202, 204, 206, 207, 216, 259, 266, 268, 271,  
 276, 280, 282, 309, 322, 353  
 Harvey, Margaret 47  
 Hasey, Ray 332  
 Haskins, Caryl 152, 154, 288, 338, 339, 355, 358  
 Hauge, Gabriel 330  
 Hauser, Stuart 66  
 Havlik, Neil 332  
 Hawk, Ann 152  
 Hawk, Danny 152  
 Hawk, Katie 152  
 Hayes, Helen 172  
 Hearst, Catherine 78, 94  
 Hearst, John 41, 55, 133, 291  
 Hebert, Alvin 193  
 Hebert, Kenneth 292  
 Heck, Henry 5  
 Heffner, Hugh 189  
 Heftmann, E. 228  
 Heger, Joseph 191  
 Heilbron, Louis 155  
 Heimborg 71  
 Heller, Edward 79  
 Heller, Elinor 78, 94  
 Hellman, Morris 45  
 Helmholtz, Betty 147  
 Helmholtz, Carl 22, 44, 145, 147  
 Helms, John 335  
 Henderson 212, Chris 167  
 Henderson, Hazel 38  
 Henderson, R. 312  
 Hendricks, Cathy 180  
 Henkin, Leon 44, 55, 133, 293, 335, 344  
 Henry, Paul 281  
 Henry, Warren 102  
 Hensen, John 13  
 Herm, Ronald 329  
 Hern, Karen 132  
 Hernandez, Gary 53  
 Herrara, Ismael 111  
 Herrick, H. T. 98  
 Herrmann, Gunter 49, 54, 55, 88, 102, 104, 149, 159, 192, 228, 229,  
 238, 250, 256, 277  
 Herschbach, Dudley 301  
 Herter, Christian 47  
 Herzog, W. 230  
 Herzstein, Mortimer 319  
 Hessemer, Daniel 115  
 Hetzer, Nick 220  
 Hewit, Pierre 315  
 Hewitt, Sally 204  
 Hewlett, William 300, 337, 339, 351, 361  
 Heyman, Ira 213  
 Heyns, Roger 38, 93, 105, 108, 109, 206  
 Higgs, DeWitt 79

Higson, John 22  
Hildebrand, Emily 17, 20  
Hildebrand, Joel 4, 17, 20, 21, 58, 123, 291  
Hildebrand, Roger 39, 89, 334  
Hilf, Eberhard 194  
Hill, David 312, 357  
Hill, Hunter 137, 141  
Hill, John 311, 313  
Hill, Lillian 322  
Hill, Richard 60  
Hill, Shradly 20  
Hille, Monika 177  
Hillman, William 34  
Hillsman, Regina 175  
Hinckley, Robert 102, 160, 202, 270, 306  
Hinderaker, Ivan 92  
Hindersson, Mickael 249, 253  
Hindson, Mrs. William 115  
Hirsch, Robert 326  
Hitch, Charles 11, 13, 14, 15, 30, 52, 54, 83, 89, 92, 93, 95, 124, 194, 214, 295, 298, 304, 306, 320, 321, 328, 329, 341  
Hitchcock, Ethan 37, 38  
Hobe, Peter 96  
Hochstadter, Irving 340  
Hodges, Gil 166  
Hodgson, Keith 159  
Hoermann, Roland 150  
Hoff, Richard 25, 100  
Hoffman, Bernard 131  
Hoffman, Darleane 100, 123, 132, 195, 220, 287, 325  
Hoffman, Martin 326  
Hofstadter, Robert 294  
Hogeland, Donald 108  
Holder, Denny 138  
Holdren, John 283, 352  
Holifield, Chester 191  
Holland, Josh 337  
Hollander, Alan 90  
Hollander, Jack 2, 11, 22, 23, 30, 31, 33, 41, 42, 43, 46, 49, 50, 51, 56, 61, 63, 69, 82, 83, 87, 88, 95, 98, 99, 102, 103, 104, 106, 116, 117, 118, 122, 132, 137, 146, 152, 159, 160, 164, 165, 167, 171, 177, 187, 188, 193, 194, 202, 205, 209, 210, 212, 213, 216, 259, 266, 267, 270, 271, 275, 282, 283, 298, 302, 307, 309, 325, 328, 343, 350, 352  
Hollander, Marjorie 90  
Holles 71  
Holliday 71  
Holliday, James 22, 44, 51, 190  
Hollingsworth, Margaret 326, 328  
Hollingsworth, Robert 69, 78, 110, 117, 146, 168, 182, 194, 214, 218, 259, 262, 298, 312, 326, 327, 328, 353  
Holm, Lennart 251  
Holmes, Gordon 22  
Holton, Gerald 109, 154, 357  
Home, William 119  
Honigman, Daniel 46



Hoo, George 344  
 Hopkins, Frank 296  
 Hornbeck, Hulet 43, 44, 46, 119, 148, 163, 174, 199, 200, 207, 267, 272, 350  
 Horne, William 163, 184, 199, 225, 298, 331, 350  
 Horowitz, Tony 66  
 Horwitz, Philip 79, 112, 195, 220, 298, 299  
 Hosmer, Craig 191, 298, 316  
 House, Howard 173  
 Hoveyda, Amir Abbas 93  
 Howard, Alice 136, 142, 227, 332  
 Howard, Michael 91, 305  
 Howard, Virgil 275  
 Howe, Bruce 263, 265, 317, 323  
 Howe, Lucinda 204, 206, 323  
 Howe, William 203, 204, 206  
 Howekamp, Marily 331  
 Howland, Jerry 21, 42, 45, 46, 53, 54, 99, 105  
 Hsiang, Myrtle 329, 345, 353  
 Hsu, Chieh 346  
 Hsu Chao-hsiang 342, 345  
 Hu Shih-chuan 342, 345  
 Hubbard, Barbara 68  
 Hubbell, Wayne 59  
 Huber, Brent 12, 203  
 Hubner, Walter 250  
 Hudgins, Arthur 205  
 Huffman, Eugene 193, 194, 201  
 Hughes 71  
 Hughes, Ann 165  
 Hughes, James 266  
 Hughes, John 65  
 Hughes, Sam 316  
 Huizenga, John 29, 73, 198, 274, 305, 350  
 Hulet, Kenneth 3, 10, 22, 23, 25, 33, 51, 52, 79, 100, 124, 180, 181, 188, 193, 196, 206, 208, 214, 222, 232, 236, 238, 299, 343  
 Hulet, Randy 208  
 Hummel, James 66  
 Humphrey, Hubert 136, 144  
 Hurd, Kenneth 324  
 Hurlburt, Helene 58  
 Hussonnois, Michael 235  
 Hutchison, Gary 219, 221, 278, 298, 299, 300  
 Huth, Chauncey 72  
 Hyde, Earl 3, 8, 11, 14, 15, 23, 28, 29, 30, 31, 32, 33, 40, 41, 41, 43, 45, 47, 49, 51, 52, 53, 54, 61, 64, 75, 79, 81, 82, 92, 95, 101, 102, 103, 104, 106, 116, 118, 121, 122, 123, 142, 146, 148, 149, 167, 168, 169, 170, 177, 187, 188, 193, 196, 198, 199, 201, 202, 204, 206, 216, 259, 266, 267, 268, 270, 271, 274, 275, 280, 282, 290, 294, 302, 304, 305, 306, 307, 308, 309, 318, 321, 322, 324, 325, 327, 330, 334, 337, 343, 348  
 Hyenstrand, Ake 254  
 Inman, Don 275  
 Ippomatsu, Tamaki 315  
 Irwin, Jerry 22  
 Iselin, John 37

Ivanoff, Catherine 100, 286  
Ives, Mrs. Kenneth 37  
Iwata, S. 43  
Jackson, Geraldine 136, 272, 332  
Jackson, Henry 237  
Jackson, William 106  
Jacob, Norman 52  
Jacobs, Jackie 65  
Jacobson, Norman 315  
Jager, Ethel 10  
Jameson, Louis 114, 115  
Jamieson, John 346  
Janinek, Marie 1, 10, 14, 21  
Jansen, Elizabeth 90  
Jansen, Robert 44, 90, 224, 226  
Jarring 83  
Jasaitis, Jonathan 209  
Jasperson, Robert 266  
Jayko, Michael 322  
Jefferds, Mary 136, 221, 225, 282, 307, 332, 350  
Jeffries, Carson 301  
Jenkins, Tyrie 194, 195, 196, 219, 221  
Jenkins, William 191  
Jennings, Percy 207  
Jennings, Richard 331  
Jensen, Lyle 291  
Joffe, Seymour 360  
Johansen, Gunnar 190  
Johansson, Erik 250  
Johnson, Chalmers 346  
Johnson, Gerald 109, 132, 188, 270, 312  
Johnson, Joanne 224  
Johnson, Joseph 32  
Johnson, Lyndon 141  
Johnson, Mary 60  
Johnson, Raymond 37  
Johnson, Robert 65, 92, 264  
Johnson, Russell 66  
Johnson, Wesley 326  
Johnson, Wilfred 152  
Johnson, William 38, 314  
Johnston, Harold 44, 291  
Johnston, John 25, 180  
Jolly, William 59  
Jones, Bart 73  
Jones, Betty 132  
Jones, Chuck 180  
Jones, David 178, 179  
Jones, Hardin 306  
Jones, Llewellyn 138  
Jones, Pat 73  
Jones, Robert Trent 173  
Jones, Thomas 141  
Jordan, Vernon 72, 134, 187  
Jorgenson, Lee 207  
Joseph, Peter 49

Josephs, Devereux 37  
Josey, Jack 318  
Judd, David 15, 120, 147  
Judkins, Charles 312, 357, 360  
Jukes, Thomas 23  
Julius, Marian 203  
Kaffrell, N. 230  
Kagan, Yuri 238  
Kagawa, George 343  
Kahn, Robert 21  
Kahr, Charles 99  
Kaiser, Edgar 77, 85, 97, 330  
Kaiser, Henry 44, 51, 85  
Kaiser, Lloyd 38  
Kaiser, Rose 97  
Kallgren, Joyce 346  
Kamenskaya, A. N. 236  
Kaniclides, Penny 173  
Kaplan, Joseph 342  
Kaplan, Martin 358  
Kaps, Stewart 295, 296  
Kapshaninoff, Yury 231, 234  
Karayn, James 38  
Karlik, Berta 219  
Karlstrom, Ulla 249  
Karplus, Robert 44, 120, 133, 293, 335, 344  
Karsberg, Arne 255  
Kartalia, Mitchell 173  
Kasapligi, Baki 136  
Kasha, Michael 118, 170, 197  
Kassal, Jane 64, 65  
Katz, Joseph 112, 137, 146, 248, 260, 280, 284  
Katzin, Leonard 113  
Kaufman, Abbe 152  
Kay, Herma 278  
Kearns, David 296  
Keatley, Anne 288, 290, 293, 304, 308, 314, 324, 335, 342, 348, 353  
Keck, David 317  
Keefe, Denis 247  
Keene, William 94  
Keeney, Robert 13  
Keith, Alan 29  
Keldysh, Mstislav 116, 243, 256, 263, 276, 279, 283, 286, 291, 301, 333  
Kelleher 148  
Keller, Cornelius 50, 138, 146, 235, 353  
Keller, Donna 113  
Keller, Lewin 55, 72, 73, 82, 84, 113, 232, 235, 236, 277, 281, 286, 349, 350  
Kelley, Gregory 140  
Kelly, Elmer 54, 81, 87, 89, 102, 124, 147, 160, 191, 202, 259, 266, 306, 325  
Kelly, John 154  
Kelly, Will 85  
Kelsick, Merlin 70  
Kendeigh, S. C. 109

Kennedy, Edward 20, 181  
Kennedy, John 52, 94, 176, 199, 225, 255, 321  
Kenny, James 184  
Kent, Jerry 331  
Kenyon, George 77  
Kenyon, Richard 227  
Kerley, Robert 78, 123, 331  
Kerr, Catherine 224  
Kerr, Clark 98, 105, 108, 199  
Kerr, James 184, 200  
Kerst, Donald 290  
Kertesz, Francois 114  
Kerwin, Joseph 71  
Ketallapper, Hendrick 150  
Ketchum, Stanley 10  
Key, Lawrence 60  
Kharasch, Norman 63  
Khomenko, Yuri 291  
Khrushchev, Nikita 185  
Kidder, Norman 298  
Kidner, Frank 34  
Kienle, Paul 219, 227, 263, 274, 279, 325, 350  
Kiesel, Ferd 281  
Kihara, Ron 132  
Kihara, Sylvia 111, 115, 132, 137, 258  
Kimball, Thomas 311  
King, Cecil 1, 137  
King, Ivan 334  
King, James 259  
King, Neil 21  
Kinney, Herbert 118  
Kip, Arthur 48  
Kirby, Harold 121  
Kirshner, Lawrence 180  
Kirth, Leroy 95  
Kissinger, Henry 204, 205  
Kistiakowsky, George 38  
Kistler, William 317  
Kjellgren, Ruth 252  
Kland-English, Mathilde 162, 169, 201, 205  
Klapisch, Robert 177  
Klarmann, Joseph 65  
Kleckner, Julie 17, 28, 217, 221  
Klein, Doug 263  
Klein, Gerhard 230  
Klein, H. 229  
Klein, Melvin 285, 306  
Kleinheinz, Peter 260  
Knecht, Gus 30  
Knight, Jere 139  
Knight, Walter 338  
Knobeloch, Gordon 139  
Knowles, John 19, 185  
Knox, John 180, 282, 321  
Knox, William 20  
Kobin, William 37, 38

Koch, Gunter 88, 234, 241  
Koerper, Carl 136  
Koh, T. P. 40  
Kolbe, William 163, 215, 270  
Kolesov, E. M. 244  
Koll, Michael 21, 331  
Koller, Quentin 6, 11, 22, 171, 319  
Kolstad, George 104, 106, 161, 168, 198  
Koltunov, V. S. 237  
Kornbleth, Lester 311  
Kornbluth, Jerry 340  
Korneyev, S. G. 243, 291  
Korotkin, Yu. S. 236  
Korpusov, G. V. 241  
Kortegaard, Birt 104, 146  
Korteling, Ralph 196  
Koshland, Bunny 291  
Koshland, Daniel 291  
Kosyakov, V. N. 234, 238, 319  
Kovar, Peg 119  
Kowalczyk, Steven 164  
Kragen, Adrian 62, 77, 222, 223, 260, 349  
Kramer, Gary 6  
Krappe, Hans 102, 214  
Kratz, Anka 217  
Kratz, Jens 55, 82, 88, 92, 102, 149, 159, 160, 162, 164, 169, 174,  
175, 181, 184, 188, 193, 199, 205, 208, 212, 214, 216, 217, 222,  
223, 227, 230, 259, 263, 270, 276, 279, 282, 299, 300, 305, 321,  
324, 325, 331, 349, 351  
Kratz, Karin 217  
Kratz, Karl 230  
Kratzer, Myron 40  
Krebs, John 178, 179  
Krestianov, Vladimir 237  
Krevans, Julius 15  
Kristofferson, Ann 280  
Krot, N. N. 235  
Kruft, Stephen 7, 150  
Kruidemer 71  
Krupt, Steve 150  
Kubas, Gregory 138  
Kuenzel, Wally 275  
Kulikova, L. V. 244  
Kunkel, Wulf 99  
Kuyumgee, Yury 231  
La Porte, Todd 55, 137, 142, 213, 268, 335  
Laetsch, Watson 120, 133, 151, 269, 286, 293, 335, 344  
Laguera, Benny 8  
Lahey, Joseph 22, 77, 97, 190  
Lahey, Timothy 151  
Laird, Alan 88  
Laks, Nathan 190  
Lambert, Arthur 67  
Lambert, Catherine 67  
Lambert, Christopher 67  
Lambert, Elwyn 175

Land, Edwin 351  
Landau, Susan 66  
Landis, John 16, 315  
Landis, William 136, 332, 352  
Landrieu, Moon 115  
Lane, Edwin 298  
Lane, William 190  
Lang, Alton 204, 212  
Langer, Jonas 55, 335  
Langston, JoAnn 312  
Lanigan, Thomas 350  
Larkin, Donald 60  
Larsh, Almon 61, 85, 193  
Larson, Carol 203  
Larson, Clarence 9, 38, 314  
Larson, Lloyd 203  
Larson, Ray 311, 316  
Larsson, Alf 251  
Larsson, Borje 251  
Laslett, Barbara 145  
Laslett, Jackson 145  
Latimer, Robert 84, 106, 107, 325  
Laubengayer, Bela 73  
Laupe, W. 230  
Lautenschlager, Eleanor 111  
Lautenschlager, Philip 111  
Lawrason, F. D. 109  
Lawrence, Barbara 209  
Lawrence, Ernest O. 8, 97, 169  
Lawrence, Francine 132, 139  
Lawrence, John 13, 18, 79, 120, 151, 295, 306, 343, 347  
Lawrence, Molly 147  
Lazarus, R. B. 141  
Leake, Chauncey 358  
Lear, William 173  
Learn, Elmer 150  
Leary, Kevin 215  
Lebedenko, Mikhaeil 244  
Lederberg, Joshua 294  
Lederer, Michael 193  
Lee, Diana 175, 181  
Lee, Dora 66  
Lee, Dorothy 157  
Lee, Eugene 261  
Lee, Kai 137, 142, 194, 213  
Lee, Leo 192  
Lee, Moon 157  
Lee, Philip 15, 291, 294, 319, 334  
Lehman, Orin 37  
Lehr, Gunter 230  
Leiman, Leonard 72, 134, 187, 287  
Leitmann, George 291  
Lemne, Mats 250  
Leonard, Robert 109  
Leopold, Starker 330  
Leres, Richard 124, 193

Lessard, Robert 285  
Levine, Michael 64, 65  
Levinson, Joel 270  
Levitt, John 268  
Lewin, Joseph 55, 107, 113, 192  
Lewis, William 343  
Ley, Lothar 164  
Leyland, Robert 217, 220  
Li Fu-sheng 342, 346  
Li Ming-te 342, 347  
Libby, Willard 53  
Lieberman, Gerald 30  
Lieberman, Michael 51  
Lilienthal, James 141, 174, 311, 314, 315  
Liljenzin, Birgitta 217  
Liljenzin, Eva Lotta 217  
Liljenzin, Jol 81, 92, 148, 150, 159, 160, 162, 163, 164, 169, 174,  
175, 184, 188, 193, 199, 205, 208, 212, 214, 216, 217, 222, 223,  
227, 259, 263, 267, 270, 276, 279, 282, 299, 300, 305, 321, 324,  
325, 331, 349, 351  
Liljenzin, Olle 217  
Lin, Kent 111  
Lindås, Gunhild 249  
Lindås, Gunvor 254  
Lindås, Karin 249  
Lindås, Kerstin 254  
Lindås, Lars 254  
Lindås, Maja 249, 254  
Lindås, Nils 254  
Lindås, Sven 249, 254  
Linder, Clarence 39  
Lindgren, Mr. and Mrs. 60  
Lindgren, Ulla 254  
Lindner, Manfred 119  
Lindsay, Cindy 139  
Link, George 34, 306, 331  
Linkletter, Art 189  
Linowitz, Sol 187, 188, 189, 190, 198, 287, 322, 331, 340, 359  
Lipkin, David 65  
Lipkin, George 110  
Litwack, Leon 278  
Liu, Nat Li Huang 296  
Liu Chung-jen 342  
Liverman, James 326  
Livingston, Ralph 114  
Loar, Robert 138  
Lochak, Paul 340  
Loeb, Benjamin 1  
Lofgren, Edward 64, 146, 147, 202, 266, 292, 306, 337, 343  
Lom, Benjamin 46, 303  
London, Daniel 273  
Long, Frank 109, 181  
Long, Herman 38  
Long, Sara Jane 8  
Loper, James 38  
Lopez Morton, Luis 129

Lorant, Stephan 173  
Lorch, Kenneth 65  
Louck, James 129  
Lougheed, Ronald 25, 208  
Loveland, Walter 279  
Low, Peter 67  
Low, Rodney 67  
Low, Stuart 67  
Low, Stuart, Jr. 67  
Low, Susan 67  
Lowder, Ron 8  
Lowenstein, Robert 209  
Lowe, Robert 6  
Lucas, William 72  
Lufkin, Dan 173  
Luischeid, Ed 119  
Luria, Ann 152  
Luria, Sarah 152, 155, 316  
Luria, Scott 8, 152, 224  
Luten, Daniel 136, 137, 142  
Lyon, Barbara 113  
MacDougall, D. P. 141  
Mach, Martin 300  
Mack, Joan 38  
Mack, Dick 54  
MacNeill, Don 335  
MacWaters, J. T. 357  
Madden, Carl 68  
Maestas, Sigfredo 338  
Maggard, David 46, 49, 77, 303  
Maier, Michael 171  
Main, Robert 3, 6, 26, 31, 57, 102, 103, 104, 116, 122, 124, 146,  
148, 161, 170, 182, 196, 202, 257, 285, 292, 305, 307  
Makarov, I. M. 291  
Malley, Gregory 203  
Malm, Lloyd 107  
Malone, Thomas 289, 358  
Maly, Jaromir 82  
Mandel, Mark 304  
Mandella, Ron 6, 80, 195, 283, 317, 323, 337, 349, 350, 353, 361  
Manger, Martin 70  
Mangrum, George 180  
Manley, John 141  
Mann, Joseph 137, 141  
Marchuk, G. I. 291  
Margen, Peter 250  
Mark, Carson 141  
Mark, Greg 132  
Mark, Hans 294, 334  
Mark, Stephen 60  
Markert, Robert 110  
Markey, Christian 93  
Markov, M. A. 243  
Markowitz, Samuel 41, 52, 98, 103, 121, 123, 126, 132, 133, 137, 142,  
144, 148, 175, 176, 177, 193, 260, 280, 282, 286, 299, 350  
Marks, Leonard 38



Marm, George 113  
Marriner, Ernest 22, 78  
Marriott, Willard 173  
Marrus, Richard 117, 161  
Marsden, Robert 60  
Marsh, Gerald 34  
Marshall, Jack 119  
Marshall, Madison 70  
Marshall, Stanley 108, 109  
Martin, Archer 227  
Martin, Ernest 72  
Martin, Paul 356  
Marvel, Carl 125, 317  
Marxheimer, R. B. 176  
Maryashkin, Nicolai 236, 237, 244  
Maslach, George 2, 82, 123, 194, 291, 304, 346  
Maslin, Vladimir 239, 269  
Mason, William 173  
Massy, William 338  
Matheson, John 225  
Mathias, Simao 356  
Matlin, John 55, 133, 335  
Matthias, Frank 85  
Mattingly, Thomas 101  
Matwiyoff, Nick 138, 141  
Mauchlan, Errol 206, 216, 265, 291, 304  
Maximova, Katrina 241  
Maxwell, Robert 261, 284  
May, Bernice 336  
May, John 15  
May, Michael 189  
May, William 162, 340  
Maybach, Patricia 172  
Mayor, John 91, 201, 204, 212, 269  
Mazari, Marcos 128  
Mazia, Daniel 80, 335, 345  
McAlpine, Mrs. 128, 130  
McArt, Ebba 132  
McCaffrey, Stanley 116  
McCarter, William 38  
McClain, Martin 77  
McClellan, Catherine 152, 154  
McClellan, Elizabeth 154  
McCloskey, Peter 70, 221, 335, 337  
McCloy, John 20, 134, 187  
McColm, Douglas 150  
McCool, W. B. 212, 311  
McCorkle, Chester 46, 68, 92, 123  
McCormack, Michael 74, 177, 357  
McCovey, Willie 166  
McCoy, Charles 324  
McCracken, Kathy 103, 329  
McDaniel, Paul 23, 67, 137, 261, 262  
McDonald, John 143  
McDowell, R. S. 138  
McElhany, E. P. 56

McElroy, King 65  
 McElroy, William 38, 63, 79, 109  
 McFadden, Betsy 39, 69, 111, 155  
 McFarlane, Rhoda 154, 316  
 McFarlane, Ron 47, 148  
 McFarren, Christa 67  
 McFarren, David 67  
 McFarren, Joel Ann 67  
 McFarren, Julie 67  
 McFarren, Bob 67  
 McFeatters, Dale 67, 69  
 McGlocklin, Ed 311  
 McGovern, Dr. George 120  
 McGovern, George 70, 135, 136, 144, 172, 176, 178, 181, 184, 190,  
 198, 203, 273, 278, 305  
 McGuirk, William 285  
 McGurn, John 310, 315  
 McHarris, William 42  
 McHenry, Dean 79, 92, 347  
 McInteer, B. B. 138  
 McIver, Robert 296  
 McKee, William 207, 217  
 McKeithen, John 115  
 McKillips, Drew 176  
 McLaren, Judge 72  
 McLaughlin, Donald 20, 46, 173  
 McLaughlin, Douglas 296  
 McLaughlin, Ralph 33  
 McLean, Max 115  
 McManus, Samuel 6, 70, 71  
 McMillan, Edwin 12, 21, 51, 54, 55, 64, 81, 82, 83, 87, 88, 89, 96,  
 98, 102, 123, 146, 147, 160, 168, 169, 170, 177, 182, 188, 191,  
 194, 201, 202, 209, 266, 271, 278, 292, 295, 306, 309, 325, 331,  
 337, 343  
 McMillan, Elsie 96, 147, 331  
 McNamara, Robert 155, 159  
 McNutt, Ronald 70  
 McQueen, Karen 203  
 McQueen, Thomas 10, 24, 203  
 McRae, Lorna 136  
 McWhan, Denis 8  
 McWilliams, Doug 149  
 Meadows, Dennis 69  
 Medellin Leal, Fernando 129, 130  
 Mednick, Sylvia 7  
 Meese, William 175  
 Mefodeva, M. P. 236  
 Mehlhorn, Rolf 29, 30, 31, 83, 105, 159, 199  
 Meinke, Wayne 88, 104  
 Meldner, Heiner 91, 198, 200, 263, 274, 305  
 Menchini, Paul 60  
 Menconi, Ralph 173  
 Mendelsohn, Edgar 141  
 Mendelssohn, K. 211  
 Mendez-Docurro, Eugenio 111, 127, 130, 154  
 Menesini, Mario 88

Menke, H. 230  
Menon, Shankar 250  
Meriam, Marshall 202  
Mertens, Richard 150  
Messinger, Curtis 37  
Metcalf, R. L. 109  
Meyer, James 78, 294, 319, 334  
Meyer, John 179  
Meyer, Robert 303  
Meyer-Boricke 177  
Meyner, Robert 37  
Michael, Alexandra 244  
Michaelis, Michael 68  
Michel, Helen 103  
Michel, James 66  
Michel, Maynard 18, 29, 33, 83, 84, 103, 116, 122, 193, 198, 280, 282, 302  
Mikheev, Nikolai 232, 236, 238, 241, 244, 248, 261, 277, 281, 284, 319, 349  
Miller, Ann 325  
Miller, Bennett 51  
Miller, Daniel 72, 73, 81, 309, 327, 353  
Miller, Dave 297  
Miller, George 39, 144, 296  
Miller, James 15  
Miller, Nancy 115  
Miller, O. N. 330  
Miller, William 5  
Milleron, Norman 88, 96, 116, 118, 122  
Millett, John 263, 316  
Milligan, W. O. 5, 125, 317, 318  
Millikin, William 303  
Millionshchikov, Mikhail 18  
Mills, Douglas 297  
Mills, Stephanie 38, 63  
Mills, Thomas 138  
Milly, George 87, 144, 145, 285, 312, 326, 357  
Milnes, Larry 332  
Minter, Carol 101  
Miranda 280, 284  
Mirk, Kenneth 117, 146, 193, 281, 322, 352  
Mitchell, Bruce 9, 202, 266  
Mitchell, Lawrence 279  
Mitchell, Maurice 173  
Mochizuki, Tom 323  
Mock, Jesse 149  
Moeller, Therald 351  
Mogard, Hilding 250  
Mohlere, Edward 71, 72  
Möller, Göran 252  
Möller, Karin 252, 253  
Möller, Per 252, 254  
Mondavi, Robert 352  
Monnheimer, Mark 260  
Monroe, Haskell 165  
Monteagle, Frederick 143

Montoya, Joseph 272  
 Moore, Bradley 15, 41, 329, 345  
 Moore, Charles 220, 224, 226, 333  
 Moore, Dan Tyler 7, 111  
 Moore, James 22  
 Moore, Joseph 79, 94, 306  
 Moore, Richard 38, 227  
 Moretti, Bob 7, 321, 322  
 Moretto, Luciano 4, 5, 22, 79, 91, 106, 198, 282, 309, 329  
 Morgan, Betty 141  
 Morgan, Leon (Thomas) 138, 141  
 Morgan, Louis 16  
 Morgan, William Conger 4  
 Moriarty, James 119, 171, 184  
 Morita, Akio 172  
 Morris, Don 268  
 Morris, Frank 162  
 Morris, John 100  
 Morris, William 22  
 Morrison, Harry 133, 293, 338  
 Morrison, Helen 136, 332  
 Morrison, Philip 288  
 Morton, Rogers 161  
 Mosel, U. 91, 198  
 Mosher, Charles 74  
 Mosher, Frederick 316  
 Moshinsky, Marcos 111  
 Moss, John 340  
 Mottley, Charles 331  
 Motz, Henry 141  
 Moyer, Burton 145, 325, 334  
 Moynihan, Daniel Patrick 155, 160, 165, 288, 339  
 Mrak, Emil 53  
 Mueller, Arnold 305  
 Mueller, George 173  
 Mueller, Werner 55  
 Mulkern, Louis 273  
 Mullen, Michael 70  
 Muller, Rolf 102, 197, 212, 214, 227, 229  
 Muller, W. 238  
 Muncall, Mark 278  
 Munro, Neil 60  
 Muntzing, Manning 69  
 Murdock, Dana 148, 207  
 Murphy, Brian 224  
 Murphy, Donnie 299  
 Murphy, John 314  
 Musikas, Claude 235  
 Muskie, Edmund 70  
 Myasoyedov, Boris 235, 277, 302, 319, 327  
 Myers, Rollie 59  
 Myers, William 3, 84, 91, 102, 160, 164, 193, 198, 274, 305  
 Myerson, Martin 206  
 Nackley, Frederick 119  
 Nackley, Ila 119  
 Nader, Ralph 96, 162, 340

Naeumann, R. 230  
 Nagaparian 219  
 Nagarajan, Mangalam 208  
 Naidionov, M. V. 236, 239, 242  
 Nash, Walter 116  
 Nassikas, James 352  
 Nassikas, John 312  
 Needham, Terence 138  
 Neibert, Ann 111  
 Neibert, David 111  
 Nejedly, John 119, 180, 282  
 Nelson, Emil 76  
 Nemzek, Thomas 326  
 Nervik, Walter 25  
 Nesmeyanov, Andre 236, 242  
 Nettleton, William 259  
 Neubert, Erich 72  
 Nevin, Crocker 37  
 New, Judy 100  
 Newby, David 72  
 Newell, Homer 108, 153, 312, 356, 360  
 Newton, Amos 18, 33, 103, 149, 193, 212  
 Newton, John 211  
 Newton, Thomas 137, 141  
 Newton, Wayne 172  
 Ney, Edward 38  
 Neyman, Jerzy 11, 82, 118, 170, 196  
 Nichols, Luther 222  
 Nicklaus, Jack 96  
 Niewodniczanski, Tomasz 228  
 Niggeman, Louis 273  
 Nikolsky, B. P. 235, 244  
 Niles, Russell 149  
 Nilson, Ragnar 249, 250, 251  
 Nilsson, Bengt 217  
 Nilsson, David 217  
 Nilsson, Ingrid 217  
 Nilsson, Monica 249  
 Nilsson, Sam 249  
 Nilsson, Sven Gosta 87, 197, 198, 200, 208, 217, 219, 222, 274, 291,  
 305  
 Nitschke, Michael 10, 22, 31, 52, 87, 117, 148, 174, 181, 184, 188,  
 191, 193, 204, 208, 211, 214, 217, 222, 258, 263, 279, 285, 299,  
 300, 318, 324, 334, 343  
 Niven, David 190  
 Nix, Raymond 43, 84, 141, 198, 274, 305  
 Nixon, Alan 18, 295, 356  
 Nixon, Richard 57, 70, 109, 120, 121, 122, 125, 130, 132, 135, 136,  
 178, 184, 219, 221, 306, 320, 339, 353  
 Nojd, Lars-Ake 249, 250, 252  
 Nolan, Bruce 114  
 Nolan, William 50  
 Norberg, Richard 65  
 Nordqvist, Ingrid 115  
 Novakov, Tihomir 164  
 Nowinson, David 117

Noyes, Albert 87  
 Nugent, Leonard 114, 232, 238, 351  
 Nurmia, Matti 14, 22, 33, 47, 61, 85, 100, 133, 148, 150, 174, 181,  
 184, 191, 193, 204, 208, 211, 214, 217, 222, 223, 234, 258, 263,  
 279, 284, 285, 299, 300, 309, 318, 324, 334, 351  
 Nutting, Tania 205  
 O'Brien, Harold 139  
 O'Brien, John 291  
 O'Brien, Paul 74  
 O'Donnell, Ash 98  
 O'Gara, John 10  
 O'Konski, Chester 27  
 O'Leary, James 285  
 O'Leskar, Charles 152  
 O'Leskar, Elizabeth 152  
 O'Leskar, Richard 152  
 Oakley, Harley 9  
 Oganessian, Yuriy 232, 237, 244, 258, 263, 277, 292, 319  
 Ogle, William 141  
 Ohlke, Clarence 39, 67  
 Okrent, David 41  
 Oliver, Bernard 361  
 Ondarza, Raoul 289  
 Onsager, Lars 73  
 Oppenheim, Antoni 122, 293  
 Oppenheimer, Frank 55, 334, 335  
 Oren, Larry 119  
 Orlemann, Edwin 99, 330  
 Orlove, Ben 12  
 Orme, Ann 191, 216  
 Orth, Charles 139  
 Ortiz Mena, Antonio 152, 153, 159  
 Osborne, Darrell 113  
 Osterberg, Eva 249  
 Osterberg, Karin 249  
 Osterberg, Sven 249  
 Osterberg, Ulla-Britt 249  
 Osterlundh, C-G 250, 252  
 Ottensen-Jensen, Elise 92  
 Ottinger, Donald 222  
 Otto, A. P. 190  
 Ottosson, M. O. 251  
 Ovchinnikov, Yu. A. 291  
 Oxin, Harold 87  
 Packard, David 23, 300  
 Packer, Lester 55, 159, 199, 335  
 Page, Lloyd 109  
 Pages, Monique 235  
 Pai Chieh-fu 342, 346  
 Paige, Mary 22, 78, 321, 353  
 Pal, Lenard 271, 274, 302  
 Palmer, Lyle 53  
 Panofsky, Wolfgang 315, 347  
 Pappas, George 15, 23, 42, 54, 81, 89, 102, 106, 147, 160, 161, 164,  
 168, 191, 196, 198, 202, 206, 218, 271, 282, 302, 306, 309, 337,  
 353

Pappe, Steve 24  
Pardini, Robin 151  
Park, Roderic 291, 346  
Parker, Mrs. 55  
Parker, William 297  
Parkerton, Kathy 5  
Parkins, Phyllis 19, 74, 288, 338, 339, 355, 358  
Parmer, Laura 72, 135, 287  
Parravano, Carlo 300  
Parsa, Bahman 260  
Parsons, Thomas 8, 198, 215, 268, 270, 275, 278, 309, 319  
Pascual, Francisco 314  
Patillo, Kathy 317  
Patillo, Leonard 317  
Patrick, Ruth 289  
Patten, Charles 150  
Patterson, Kim 361  
Patterson, William 172  
Pauker, Jed 8  
Pauli, Rolf 249, 250  
Pauling, Linus 96  
Pauls, Rolf 198  
Pearson, Catherine 65  
Pearson, Wert 107  
Pedersen, Svend 162, 163  
Pederson, Suzanne 340  
Peery, Annamary 195  
Pei Shih-chang 342, 345  
Penisten, Glenn 359, 360  
Penneman, Robert 50, 97, 100, 137, 139, 146, 192, 232, 235, 242, 260  
Penzl, Herbert 58  
Peppard, Donald 113  
Peregoy, Jackie 180  
Perfilov, N. A. 131  
Perkins, James 38  
Perkins, John 54, 79, 168, 194, 197, 218, 259, 304, 306, 321, 329, 336, 343  
Perlman, David 15, 16, 289  
Perlman, Isadore 6, 12, 15, 21, 30, 31, 43, 49, 51, 58, 61, 95, 99, 102, 103, 106, 118, 119, 145, 146, 163, 188, 201, 204, 216, 223, 263, 265, 271, 302, 304, 322, 331  
Perlman, Lee 145  
Perrin, Francis 267, 270, 280, 287, 298  
Perryman, Tom 172  
Pesce, Mike 150  
Petersen, Kathryn 207  
Peterson, Eugene 207  
Peterson, Ingemar 248, 249, 252, 253, 256  
Peterson, John 203  
Peterson, Joseph 8, 192, 231, 235  
Peterson, Julie 203  
Peterson, Ken 177  
Peterson, Peter 315  
Petit, Charles 209  
Petrikova, M. N. 235  
Petrosyants, Andronik 56, 248, 309, 311, 314, 315, 321

Petrovic, Paula 312  
Pfeiffer, E. W. 355  
Phillips, Christopher 100, 105, 116, 117, 123, 132  
Phillips, Jeanette 162  
Phillips, John 164  
Phillips, Judy 281  
Phillips, Wendell 173  
Picard, Andy 203  
Picard, Meeme 203  
Picard, Soche 203  
Piccioni, Oreste 167, 169, 211, 222, 255  
Pickler, David 183  
Piel, Gerard 74  
Pigford, Thomas 350  
Pigman 355  
Pikaev, A. K. 237  
Pike, Emily 9  
Pimentel, George 8, 18, 44, 53, 55, 59, 107, 120, 133, 269, 273, 274,  
278, 280, 284, 286, 290, 293, 298, 300, 303, 306, 319, 321, 326,  
333, 335  
Pirtz, David 99  
Pittman, Frank 326  
Pitzer, Kenneth 20, 73, 269, 291, 329, 345  
Plasil, Franz 84, 91, 305  
Platez, Rudy 184  
Platz, Matthew 175  
Pochitalin, Igor 18, 58  
Pocinki, Leon 312  
Pollack, Herman 29, 39, 75, 109, 314, 316, 358  
Pollack, Louis 4  
Pollak, Edward 282  
Pollak, R. A. 164  
Polukarov, Olga 234, 236, 238, 241  
Popkov, Valerii 241  
Porter, David 6  
Porter, John 12  
Porter, Kenneth 85  
Portis, Alan 8, 44, 55, 118, 133  
Poskanzer, Arthur 4, 31, 61, 62, 83, 89, 95, 99, 103, 106, 146, 177,  
187, 188, 196, 198, 201, 216, 223, 227, 259, 267, 271, 272, 274,  
280, 282, 302, 309, 322, 350  
Pospeloff, Mikhail 231, 237, 239, 242, 248  
Possony, Stefan 266  
Poteet, Ron 297  
Potter, Elinor 103, 322  
Potter, Robert 140  
Povh, Bogdan 263  
Powell, Clinton 15  
Powell, Graham 99  
Powell, Richard 4, 44  
Prager, Carston 278  
Prausnitz, John 20  
Pregel, Boris 358  
Prestwood, Rene 139  
Pretsch, Joachim 230  
Price, Buford 35, 83, 91, 198



Price, Katrina 86, 203  
 Price, Louise 75, 341  
 Price, Mel 316  
 Price, Robert 75  
 Priest, Patience 111  
 Primack, Joel 110  
 Prokhorov, A. M. 291  
 Prussin, Stanley 88, 101, 104  
 Pseng 315  
 Puppa, William 39  
 Purdy, David 120  
 Putnam, Jane 119, 224, 225, 332, 350  
 Putnam, Thomas 141  
 Quann, Bruce 331  
 Quigg, Philip 11  
 Quinn, Brian 186  
 Quinn, Frances 308, 313, 329, 338  
 Rabi, Isidor 135  
 Rabinow, Jacob 109  
 Rajnak, Kathy 164  
 Raleigh, John 123  
 Ramel, Stig 211  
 Ramey, James 38, 96, 118, 128, 311, 315  
 Ramirez Araiza, Alfredo 127, 130  
 Ramo, Simon 17  
 Rampton, Calvin 172  
 Ramsey, Norman 189  
 Randall, Craig 119  
 Rankin, Jean 317  
 Rankin, Wally 317  
 Rapeanu, Sevastian 299  
 Raphael, Jerome 99  
 Rapoport, Henry 290, 345  
 Rasmussen, John 29, 43, 45, 47, 51, 61, 72, 124, 211, 214, 215, 219,  
 222, 224, 226, 227, 263, 265, 270, 274, 290, 296, 304, 343, 347,  
 350  
 Rasmussen, Louise 73  
 Rasmusson, Elmer 173  
 Rather, Dan 339  
 Rathmann, Franz 357  
 Raubenheimer, Albert 147  
 Raubenheimer, Judy 147  
 Raudebauch, Charles 209  
 Raveche, Harold 110, 338  
 Raven, Robert 9  
 Ray, Dixy Lee 109, 184, 314  
 Raymond, Kenneth 18, 102, 215, 279, 304, 308  
 Reagan, Ronald 9, 11, 15, 316, 320, 335, 347  
 Reagan, Ross 64  
 Reardon, Donald 209, 218, 259, 266, 305, 309, 326, 353  
 Reddington 361  
 Reed 225  
 Reed, Ann 313  
 Reed, Laura 313  
 Reed, Winifred 313  
 Rees, Eberhard 71

Rees, Mina 19, 74, 75, 81, 93, 110, 154, 288, 337, 355, 356, 358, 358  
Reeve, Marian 136, 143, 272, 332  
Reeve, Roger 136, 272, 332  
Reeves, Molly 199, 224, 225, 298, 319, 332  
Reeves, Wesley 298  
Reich 177  
Reid, Gene 145  
Reid, Grant 331  
Reif, Frederick 55, 133, 335  
Reimer, Jane 210  
Reines, Frederick 296  
Reinholdt, Fred 67  
Rengel, Joseph 314  
Revelle, Roger 109, 190, 202, 360  
Reyerson, William 358  
Reynolds, Brian 172, 204  
Reynolds, Monti 7, 59, 61, 100  
Reynolds, Robert 79  
Reynolds, Wallace 98, 147  
Rezanka, Ivan 43  
Rhodes, Paul 198, 292  
Rice, Donald 38  
Rice, Jonathan 272, 274, 279  
Rice, Robert 13  
Rich, Elizabeth 152  
Rich, Ned 152  
Rich, Scott 131  
Richard, Ludie 72  
Richards, Gilbert 173  
Richardson, Denise 57  
Richardson, Ralph 185  
Richardson, Roger 115  
Ridge, Carol 226  
Ridgway, David 56, 59, 107, 269  
Riegel, Byron 109  
Riegel, O. W. 39, 154, 313  
Rieser, Leonard 19, 75, 108, 109, 110, 152, 153, 154, 155, 159, 176,  
185, 186, 288, 312, 339, 355, 356, 358, 360  
Riggins, Lee 70  
Riggs, Durward 6, 9, 56, 202, 266  
Riksheim, Edward 324  
Riksheim, John 151  
Riles, Wilson 79, 289  
Riley, William 182  
Ring, Philip 9  
Ringrose, Edward 201  
Ripley, Dillon 74, 88, 97  
Ritter, Enlo 309, 310  
Rjorse, Sven Anders 115  
Roach, L. 332  
Robbins, Charles 4, 76, 127, 128, 308, 311  
Robbins, Pauline 311  
Roberts, Marc 289  
Roberts, Walter 35, 358  
Robin, Erika 361  
Robinson, Alice 75, 294

Robinson, Herman 103, 322  
Robinson, James 75, 294  
Robinson, Kirk 151, 349  
Robinson, Mardy 353  
Robinson, Ned 207, 268, 285, 353  
Robinson, Tay 75  
Rochlin, Gene 137, 142  
Rockefeller, John 37, 162, 340  
Rockwell, Willard 173, 330  
Rodriguez, E. 153  
Roeckl, E. 230  
Roehmer, Albert 358  
Roemer, Elizabeth 109  
Rogers, Carol 342  
Rogers, Jack 276, 285  
Rogers, Peggy 319  
Rogers, William 58  
Rogosa, George 198  
Rojas, Rafael 129, 130  
Rollins, John 172  
Romero, David 129  
Rosati, Janet 322  
Rose, Benito 175  
Rosen, Louis 140, 141, 145, 218, 272  
Rosenbleuth, Emilio 130  
Rosenfeld, Arthur 209, 304, 315, 348  
Rosenman, L. 148  
Rosenweig, Abraham 138  
Rossi, Anthony 173  
Ross, Ronald 63  
Roth, William 78, 94, 190  
Rowland, Jerry 215  
Rowland, Sherwood 297, 351  
Rozen, A. M. 242  
Ruark, John 163, 175  
Ruben, Mark 177  
Rubin, Julius 69  
Ruby, Larry 177  
Rudberg, Erik 78, 251, 255  
Rudholm, Lloyd 184, 197, 212, 221, 284  
Rudman, David 66  
Rudstam, Gösta 250, 251  
Ruedenberg, Klaus 236  
Ruffo, Al 28  
Rumer, I. A. 238  
Russell, Madeline 30, 273  
Russell, Robert 281  
Russell, Rosalind 172  
Rust, Fred 4  
Ryan, Jack 7  
Ryan, John 110, 118, 146, 194, 312, 326, 328  
Ryan, R. R. 138  
Rydberg, Jan 251  
Ryde, Nils 252  
Ryerson, George 110  
Ryerson, Phyllis 265

Rykov, A. G. 237, 238  
 Sachs, Rainer 118, 197  
 Sahara, Susan 290, 298  
 Sakshaug, Eugene 175  
 Salgado, Peter 137, 138  
 Saline, Olof 324  
 Salisbury, Sol 275  
 Salter, Dayna 60  
 Saltvedt, Kristian 250  
 Salvetti, Carlo 315  
 Sammet, Loy 12  
 Sams, Earl 281  
 Samuelsson, Bengt 252  
 Sanders, Mrs. 128  
 Sandstrom, Sten 248, 249, 250, 256  
 Santos, Alfredo 129  
 Sarabhai, Vikram A. 32, 46  
 Sarantsev, V. P. 247  
 Sardei, Francesco 355  
 Sardei, Sabine 355  
 Saroukhanian, Garegin 92, 93  
 Sattizahn, James 123, 132, 139, 141  
 Sauer, Kenneth 291  
 Saunders, James 155  
 Sawyer, Brian 8, 217  
 Sawyer, Donald 295  
 Sawyer, Gregory 175  
 Saxby, Sheila 5, 8, 9, 12, 13, 22, 24, 26, 33, 38, 41, 53, 58, 64,  
 68, 69, 73, 75, 77, 79, 80, 90, 103, 111, 114, 115, 126, 131,  
 136, 137, 149, 150, 158, 165, 166, 178, 216, 221, 226, 250, 257,  
 287, 290, 296, 313, 314, 317, 323, 324, 327, 329, 334, 337, 338,  
 341, 342, 343, 345, 348, 353, 361  
 Saxon, David 294, 319  
 Schachman, Howard 345  
 Schaefer, Henry 14, 84, 93, 236, 259  
 Schaefer, Stanley 60, 76  
 Schafer, Edward 126  
 Schafer, Harold 172  
 Schafer, Richard 126  
 Schaluger, Si 296  
 Scharfsin, Joseph 76  
 Schawlow, Arthur 334  
 Scheinman, Larry 213  
 Schiefele, Walter 66  
 Schiffer, Alan 263, 265, 317, 322  
 Schlesinger, James 9, 32, 34, 38, 47, 61, 67, 68, 78, 118, 135, 146,  
 152, 160, 189, 218, 261, 262, 264, 266, 271, 295, 307, 316, 320,  
 328, 353  
 Schleuter, Donald 65  
 Schmelzer, Christoph 198, 215, 218, 228, 229, 230, 238, 250, 256,  
 279, 302, 305, 307  
 Schmidt, Darlene 332  
 Schmidt, Nadine 13  
 Schmidt, Victor 13  
 Schmitt, Harrison 337, 342, 344  
 Schneider, Renee 40, 67, 111, 310, 356, 358

Schneider, Stanley 1, 34, 39, 40, 67, 69, 109, 111, 310, 356, 358  
 Schneider, Wendy 111  
 Schnurr, H. 314  
 Schorsten, Edward 71  
 Schou, August 92, 211  
 Schreiber, R. E. 141  
 Schriver, Dorothy 66, 69, 109, 115, 154, 313  
 Schroder, Elis 253  
 Schroder, Margit 253  
 Schuff, Hans 228, 256  
 Schuirmann, Donald 155  
 Schultz, Arnold 283  
 Schultz, Jonas 297  
 Schuman, Mrs. William 37  
 Schwartz, Charles 42  
 Schwartz, Sheldon 2  
 Schwartz, Sherman 6  
 Schwartz, Walter 199, 350  
 Schweitzer, Glenn 289  
 Schweser, Thomas 225  
 Sciamanna, Aldo 33  
 Scorce, John 360  
 Scott, Elizabeth 94, 338  
 Scott, Lloyd 55, 335  
 Scott, Peter 301  
 Scott, Robert 20  
 Scott, Roger 30  
 Scribner, Richard 338  
 Scripps, Edward 39, 109, 313  
 Seaborg, Charles 182  
 Seaborg, David 6, 12, 13, 24, 25, 26, 27, 28, 29, 39, 55, 58, 59, 61, 74, 79, 80, 81, 85, 87, 100, 150, 155, 156, 157, 158, 165, 166, 171, 188, 191, 192, 193, 195, 196, 197, 199, 200, 201, 204, 205, 206, 208, 209, 210, 211, 212, 214, 216, 217, 219, 220, 221, 222, 222, 224, 226, 258, 267, 270, 272, 273, 278, 301, 302, 303, 318, 318, 322, 323, 335, 336, 349, 352, 353, 354, 355, 361  
 Seaborg, Dianne 1, 3, 10, 16, 17, 24, 26, 28, 31, 32, 34, 36, 40, 48, 52, 53, 57, 58, 64, 77, 80, 81, 85, 87, 90, 96, 100, 101, 105, 125, 131, 133, 134, 135, 136, 137, 142, 144, 145, 147, 151, 152, 154, 155, 156, 157, 158, 180, 182, 185, 187, 188, 195, 197, 204, 206, 209, 210, 217, 221, 253, 261, 265, 267, 272, 278, 283, 284, 289, 298, 299, 300, 301, 308, 310, 311, 313, 315, 316, 317, 321, 323, 326, 336, 349, 352, 355, 361  
 Seaborg, Eric 1, 2, 4, 6, 8, 10, 12, 13, 14, 15, 17, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 31, 32, 33, 35, 36, 39, 40, 41, 42, 44, 44, 45, 46, 48, 50, 53, 54, 57, 58, 59, 62, 64, 76, 77, 79, 80, 81, 85, 90, 91, 96, 97, 98, 99, 100, 101, 102, 103, 105, 107, 108, 116, 117, 119, 122, 123, 125, 126, 131, 132, 133, 135, 136, 141, 142, 144, 145, 147, 148, 150, 151, 155, 156, 157, 158, 159, 163, 165, 166, 167, 174, 180, 185, 187, 188, 191, 217, 224, 258, 263, 281, 283, 284, 301, 317, 322, 323, 349, 350, 352, 353, 354, 355, 361

Seaborg, Helen 1, 2, 3, 4, 10, 15, 17, 18, 20, 24, 25, 26, 28, 29,  
 30, 31, 34, 36, 39, 40, 42, 44, 47, 49, 52, 53, 57, 58, 60, 61,  
 64, 75, 79, 80, 81, 82, 85, 87, 90, 92, 93, 96, 100, 103, 105,  
 108, 111, 115, 119, 123, 125, 127, 131, 133, 134, 135, 137, 141,  
 144, 145, 147, 150, 152, 155, 156, 157, 158, 170, 171, 173, 180,  
 183, 185, 187, 194, 195, 196, 197, 203, 204, 206, 210, 211, 214,  
 216, 219, 221, 222, 223, 224, 225, 227, 248, 249, 252, 258, 260,  
 261, 264, 267, 273, 276, 278, 283, 284, 287, 289, 291, 295,  
 297, 301, 302, 303, 308, 310, 311, 312, 313, 315, 316, 317, 318,  
 321, 322, 323, 326, 328, 329, 331, 336, 337, 342, 347, 350, 351,  
 352, 352, 353, 354, 355, 361  
 Seaborg, Henry 75  
 Seaborg, Jane 1, 12, 19, 20, 39, 40, 66, 67, 69, 74, 75, 108, 109,  
 110, 111, 152, 154, 155, 217, 224, 288, 310, 312, 313, 315, 316,  
 318, 337, 341, 355, 356, 360, 361  
 Seaborg, Peter 1, 12, 19, 20, 39, 40, 66, 67, 69, 74, 75, 101, 108,  
 109, 110, 111, 152, 154, 155, 217, 224, 288, 310, 312, 313, 315,  
 316, 318, 337, 341, 355, 356, 360, 361  
 Seaborg, Stephanie 219  
 Seaborg, Stephen 6, 12, 13, 24, 25, 26, 27, 28, 39, 45, 79, 80, 81,  
 82, 84, 86, 100, 125, 142, 150, 170, 171, 188, 195, 197, 201,  
 203, 203, 204, 205, 206, 207, 208, 210, 219, 222, 224, 273, 281,  
 283, 283, 284, 301, 317, 322, 323, 337, 349, 350, 353, 355, 361  
 Sedam, Charles 175  
 Sedlacek, William 139  
 Seegar, Ray 19  
 Seeger, Philip 84, 91, 141, 198, 274  
 Segre, Claudio 145  
 Segre, Emilio 51, 56, 123, 145, 147, 167, 169, 209, 211, 222, 223,  
 255, 260  
 Segre, Fausta 145  
 Segre, Rosa 145  
 Seitz, Frederick 33, 34, 45, 190  
 Selph, Frank 56, 104  
 Semenov, Boris 311, 314  
 Semple, Jane 34  
 Sentora, Dee 7  
 Sergei, Kirsanov 239, 269  
 Service, John 346  
 Sessions, Ed 148, 207  
 Sessler, Andrew 23, 41, 42, 46, 50, 51, 63, 69, 83, 87, 88, 98, 99,  
 102, 117, 165, 202, 214, 216, 218, 247, 259, 261, 262, 275, 283,  
 298, 307, 309, 343  
 Sewell, Duane 25, 54  
 Seyb, K. E. 230  
 Shabarum, Pete 6  
 Shalev, Shlomo 250  
 Shalimoff, George 33  
 Shapiro, David 152  
 Shapiro, Peter 152  
 Sharp 70, 71  
 Shaw, Milton 177  
 Sheline, Ray 260, 336, 350  
 Shen, Benjamin 296  
 Shepard, Donald 138  
 Shepard, Rosemary 93, 203

Shepard, William 34  
Shepherd, James 72  
Sherburne, Edward 34, 35, 39, 40, 45, 56, 66, 69, 76, 109, 115, 154,  
170, 243, 263, 313, 321  
Sherman, Catherine 148, 219, 280, 284  
Sherman, Jake 148  
Sherman, Yehuda 58, 280  
Sherman, Yehudit 299  
Sherriffs, Alex 78  
Shields, Lora 109  
Shih, Ch'eng-chih 346  
Shilov, V. P. 235  
Shirley, David 5, 8, 11, 14, 29, 31, 47, 51, 61, 89, 95, 103, 106,  
118, 124, 146, 164, 167, 169, 171, 177, 188, 208, 216, 259, 268,  
271, 282, 290, 291, 309, 322, 324, 331, 345, 351  
Shockley, William 96  
Shreffler, Robert 141  
Shriver, Peter 66  
Shriver, Sargent 203  
Shull, Theodore 139  
Shute, Ellison 56, 59, 98  
Sibert, John 72, 73  
Sibley, Shermer 175  
Siegbahn, Manne 256  
Siegel, Sidney 311  
Siemens, P. J. 219  
Sills, Mary Jane 136, 272  
Silva, Frank 221  
Silva, Robert 55, 73, 82, 92, 99, 102, 103, 112, 113, 123, 126, 127,  
132, 148, 159, 169, 174, 175, 181, 182, 184, 188, 193, 195, 220,  
277, 281, 286, 298, 299, 300, 302, 307, 349  
Silver, Daniel 35  
Simmons 298  
Simmons, Barry 11  
Simon, Norton 330  
Simonpietri, Andre 129  
Simpson, John 312, 315  
Sinanoglu, O. 73  
Singer, Fred 108, 153, 356  
Siri, Jean 282  
Skolnikoff, Eugene 186, 358  
Skryabin, G. K. 243, 299  
Slater, Gerald 38  
Slattery, Bart 72  
Slawter, Paul 37  
Slosek, Ted 286  
Slossen, John 50  
Smith, B. 79  
Smith, Becky 204  
Smith, Duane 138  
Smith, Emil 288, 293, 315, 323, 330, 342, 346  
Smith, Harold 280  
Smith, Jeffrey 204  
Smith, Jesse 173  
Smith, Joseph 326  
Smith, K. W. 20

Smith, Kirk 117  
Smith, Louise 132, 139  
Smith, Mary Louise 61  
Smith, Milo 183  
Smith, Morgan 202  
Smith, Mrs. Frank 175  
Smith, Richard 152  
Smith, Robert 162  
Smith, Virginia 105, 165  
Smith, Walter 138  
Smith, William French 11, 12, 13, 14, 79, 93, 295, 298, 304, 316  
Smuckler, Syd 153  
Smyth, Harry 213, 315  
Snell, Esmond 345  
Snow, Richard 150  
Snowden, Conrad 338  
Soberon, Guillermo 129  
Soengen, Ann 170  
Soff, Gerd 215, 229  
Soinski, Arthur 208  
Sokol, Harvey 322  
Sokolowski, Evelyn 250  
Solari, Rafael 9  
Soleri, Paulo 65  
Solomon, Arthur 109, 186, 359  
Solomon, Donald 66  
Solow, Robert 108  
Somerton, Wilbur 133, 335  
Sommer, Charles 137  
Sommer, Robert 33  
Sommer, William 33  
Somorjai, Gabor 41, 275  
Sonnenberg, Martha 165  
Sontag, Ray 21  
Sorenson, Niels 135, 151, 167  
Sorenson, Ted 20  
Spalding, John 138  
Sparrowe, Gordon 175  
Spees, Richard 97, 114  
Spengler, K. C. 109  
Spight, Richard 51  
Spilhaus, Athelstan 19, 39, 94, 109, 356, 358  
Spitsyn, Viktor 50, 55, 87, 231, 241, 242, 319, 349  
Spivak, Lawrence 286  
Spoerri, Simone 37  
Spratley, Richard 53  
Sproul, Marjorie 325  
Spurgel, George 108, 109, 312, 360  
Spurr, Stephen 16  
Spurrier, Lon 46  
Stacy, James 164  
Stähle, Nils 209, 210, 220  
Stanerson, Bradford 108  
Stanton 115  
Stark, Fortney 144  
Starks, David 215, 278



Starr, Albert 173  
 Starr, Chauncey 17, 341  
 Starr, John 346  
 Startsev, M. A. 244  
 Stathakis, George 311  
 Steel, Gertrude 271, 282  
 Stein, Greg 40  
 Stein, Herbert 2  
 Stein, Howard 72, 134, 186, 287, 340  
 Stein, Larry 113  
 Stein, Lois 6, 150, 170  
 Stein, Si 78  
 Steinberg, Warden 46  
 Stent, Gunther 294, 334  
 Stephan, Claude 177  
 Stephens, Frank 3, 8, 81, 95, 171, 205, 208, 219, 263, 268, 274, 302, 309, 325, 350  
 Stephens, William 70  
 Sterky, Hakan 252, 255  
 Sterling, Doreen 111  
 Stetson, Nathaniel 326  
 Stevens, Donald 309, 310  
 Stevenson, Peter 25  
 Stever, Guyford 9, 38, 50, 107, 190, 191  
 Steward, Newton 289  
 Stewart, Donald 142  
 Stewart, George 21  
 Stewart, Isaac 172  
 Stewart, Walter 110, 338  
 Stickley, James 155  
 Stockdale, Colonel 77  
 Stoddard, Hudson 37  
 Stofani, Laura 287  
 Stone, Clement 173  
 Stone, Emery 2  
 Stone, Irving 92, 94  
 Stone, Jeremy 67, 226, 288, 290, 338, 342, 347, 348  
 Stradella, Charles 37  
 Strandberg, Carl 224  
 Strange, Joyce 164  
 Strassmann, Fritz 230  
 Strauss, Lewis 263, 301, 308, 314  
 Strauss, Robert 359  
 Street, Kenneth 14, 31, 32, 41, 43, 50, 52, 61, 95, 98, 106, 146, 167, 169, 188, 201, 216, 271, 282, 294, 302, 322  
 Streitwieser, Andrew 14, 167, 170, 177, 215, 278  
 Stress, Hope 203  
 Stress, Skip 203  
 Strohmaier, Leonora 136, 332  
 Strong, Edward 92, 93, 206  
 Stroube, Hal 314  
 Stuhlinger, Ernst 71, 72  
 Stumpf, Paul 123  
 Sudarov, L. V. 235  
 Sudduth, Emily 298  
 Sugihara, Tom 267

Sugulobov, D. N. 244  
Suits, Gene 44  
Sullivan, Christine 7  
Sullivan, Walter 267, 270  
Sundberg, David 114  
Susskind, Charles 63, 68, 267, 343  
Suter, Jo Ann 100  
Sutton, Francis 186  
Sveland, Ingvar 310, 314  
Swanson, Basil 138  
Swanson, Carl 108  
Swanson, Helen Marie 267, 311, 351  
Swatt, Steve 32  
Sweeney, Wilmont 85  
Swiatecki, Wladyslaw 23, 31, 43, 61, 76, 84, 91, 102, 120, 198, 234,  
274, 305, 309, 327  
Swift, Richard 150  
Swiller 64  
Symington, James 347  
Szapocznik, Joseph 111  
Szasz, Paul 213  
Taay, Ann 8  
Tabachnik, Nina 66, 79, 172  
Taft, William 109  
Tagesen, Siegfried 219  
Talley, Wilson 343  
Tamura, T. 43  
Tandberg, Olaf 255  
Tanner, Eldon 173  
Tape, Gerald 39, 45, 67, 109, 135, 152, 154, 170, 262, 311, 313, 316  
Tape, Jo 67, 311  
Tape, Thomas 67  
Tarkhov, A. G. 50  
Tarski, Alfred 123  
Taschek, Richard 141  
Tate, Gary 207  
Taverner, Donald 38  
Taylor 71  
Taylor, Angus 63, 79, 330, 343  
Taylor, Ellison 82, 114  
Taylor, Michael 72, 135, 187, 287  
Taylor, Pamela 224  
Taylor, Ted 213  
Teague, Sam 37  
Teem, John 261, 262, 275, 302, 307, 309  
Teller, Edward 52, 198, 265, 306, 308, 331  
Teller, Mici 308, 331  
Tellez, Teresa 74  
Templeton, David 14, 31, 51, 61, 82, 95, 99, 103, 106, 146, 167, 169,  
188, 201, 216, 259, 263, 265, 271, 282, 291, 302, 322, 324, 345  
Ter-Akopyan, G. M. 244  
Terman, Frederick 30  
Texley, A. G. 281  
Theobald, Robert 63  
Theobald, Joanne 34  
Thimann, Kenneth 19, 89, 109, 294, 325

Thomas, Darrah 47, 206  
Thomas, Gareth 346  
Thomas, James 178, 179  
Thomas, Lowell 172, 189, 190  
Thompson, Stanley 3, 8, 14, 15, 16, 22, 23, 29, 30, 31, 51, 54, 61,  
78, 79, 81, 91, 95, 103, 106, 118, 139, 146, 169, 188, 198, 201,  
208, 216, 229, 238, 257, 268, 271, 274, 276, 282, 300, 302, 322  
Thoren, Goran 250  
Thorn, Robert 141  
Thorne, Robert 59, 98, 105, 116, 118, 168, 194, 214, 218, 259, 266,  
298, 309, 326, 327, 328, 337, 353  
Thornton, Betty 147  
Thornton, Dean 359  
Thornton, Peggy 147  
Thornton, Robert 54, 81, 87, 89, 96, 102, 147, 160, 163, 325  
Tibell 251  
Ticho, Harold 89, 334  
Tien, Chang 346  
Timbs, Maurice 312  
Timerbulatov, Ilgis 236, 239, 242  
Tinoco, Nacho 291  
Tiselius, Arne 211  
Tittel, G. 230  
Tobias, Charles 275  
Tobias, Cornelius 42, 124, 252, 286, 292, 343  
Todd, Rick 53  
Topping, Norman 272  
Toth, Kenneth 286  
Totter, John 102, 154  
Tough, Terry 96  
Townes, Charles 52, 89, 291, 294, 298, 324, 334, 343  
Townsend, Lynn 330  
Trautman, Norbert 49, 52, 55, 192, 228, 230, 231  
Travers, Charles 9  
Treiman, M. H. 141  
Tremmel, Ernest 192, 311  
Trilling, George 48, 145  
Trimble, Sterling 297  
Trione, Henry 303  
Tripp, Mike 180  
Tripp, Minor 119  
Troan, John 39, 154  
Troutner, Leroy 150  
Trudeau, Richard 119, 184, 200, 276, 350  
Trull, Sam 28, 31, 34, 41  
Truman, Harry 335, 336, 337, 339, 344, 351, 355, 358  
Trumbull, Richard 19, 74, 154, 288, 338, 339, 358  
Tsang, Chin-Fu 84, 91, 92, 98, 102, 198, 274, 305, 350  
Tsien Jen-yuan 342, 345  
Tsien Wei-chang 342, 346  
Tsivadze, A. Yu. 235  
Tu Pei-lin 342  
Tuck, L. D. 15  
Tumanov, Yurii 232, 242  
Tumins, Valerie 150  
Tunney, John 83, 171, 212, 335, 337, 347

Turner, Duane 106  
Tutt, William 173  
Tuwiner, Sidney 37  
Tydings, Joseph 21  
Udall, Stewart 44, 46, 119, 143, 161, 163, 183, 214, 272, 333, 352  
Udelson, Jerry 63  
Utterbak, Oswald 152  
Ulrich, Rudolph 258  
Unik, John 29, 47, 51, 54, 79, 112  
Urey, Harold 52  
Urquhart, Patricia 3  
Urquidi, Victor 129, 130, 356, 358  
Ursu, Ioan 45  
Vale, James 147, 202  
Valens, Red 96  
Valens, Tom 96  
Valerio 321  
Valigura, William 138  
Valli, Kalevi 187  
Van Duzer, Theodore 59  
Van Dyken, Alexander 29, 103, 106, 146, 168, 267, 302, 307, 309, 310  
van Osdall, Fred 317  
Van Vlierden, C. M. 273  
Vander Sluis, Kenneth 114  
Vares, Peter 243  
Varga, L. P. 138  
Vargas, Jorge 289  
Vasiliev, Vladimir 241  
Vasquez, Bertha 127, 130  
Vaughn, Sam 92  
Vautherin, D. 227  
Vergamini, Phillip 138  
Verneroni, Marcel 212  
Vesper, Howard 11, 12, 14, 145, 189, 334  
Vetter, Betty 338  
Vetterlund 252  
Vick 71  
Vieira, David 279, 298  
Vinciguerra, John 69, 326  
Vinogradov, A. P. 231, 234  
Viola, Victor 350  
Vladimirova, M. V. 237  
Voelz, George 141  
Volheim, Mart 298  
von Euler, Ulf 211  
von Friedenburg 215  
Vukasin, John 175  
Waber, James 232, 235, 242  
Waddell, Ruby 83, 165  
Wagner, Frederick 24, 203  
Wagner, Karen 10, 24  
Wagoner, Ann 42  
Wahl, Arthur 47, 65, 163, 196, 296  
Wahlig, Michael 202, 270  
Wahlquist, Carl 255  
Wake, David 55, 133, 335

Wakefield, Rowan 68  
Wakelin, James 38  
Wakeman, Frederic 346  
Walbot, Virginia 110  
Wald, George 355  
Waldo, Dwight 316  
Waley, Baird 102  
Walgren, Stanley 151  
Walker, Eric 39  
Walker, Linda 133  
Wallace, George 126  
Wallenmeyer, William 353  
Wallis, Richard 297  
Walsh, Charles 320  
Wang Li 342  
Ward, Barbara 29, 76  
Ward, Harris 29, 32, 34  
Wardle, Peter 320  
Warne, William 316  
Warner, Jim 300  
Warner, Ralph 282  
Warren, Fred 341  
Warren, Shields 42, 117, 122, 189  
Warren, Stafford 117, 122, 189  
Warshaw, Maurice 172  
Washburn, Sherwood 44, 55, 123  
Washington, Esther 90  
Washington, Warren 109  
Washington, William 90  
Wasilczyk, John 32  
Waters 71  
Watkins, Dean 79, 264  
Watson, Jay 48, 51  
Watson, Susan 225, 272, 298, 332, 336, 350  
Weaver, Billy 357  
Webb, Catherine 272, 274, 279, 280, 332  
Webb, James 38  
Weber, Joseph 297  
Weber, M. 230  
Weber, Virginia 297  
Weeks, Denise 7, 24, 100  
Weeks, Rene 100  
Wehner, Peter 125, 318  
Weidenfeld, Jay 282  
Weidner, Hermann 72  
Weigel, Fritz 43  
Weinberg, Alvin 113, 223  
Weinberger, Caspar 6, 9, 11, 17, 67, 274, 295, 304, 316, 320, 327,  
328  
Weiss, Carroll 83  
Weisskopf, Victor 118, 359  
Weissmann, Samuel 65  
Welch, Robert 125  
Wemmer, David 100  
Wendland, Elmira 115  
Wenk, Edward 109, 116

Wenzel, William 51, 54, 67, 81, 82, 87, 89, 98, 102, 160, 167, 168,  
191, 223, 266, 306, 307, 325, 337, 343  
West, Leigh 24  
West, Robert 118, 158, 160, 163, 167, 168, 169, 259, 266, 306, 325  
Westbrook, Dale 220  
Wexler, Lynn 64, 65  
Whatley, Alfred 281  
Wheeler, G. W. 309  
Wheeler, John 32, 269  
Whinnery, John 55, 133, 325  
White, Barbara 75  
White, Donald 75  
White, Florene 206, 225  
White, Harvey 18, 120, 133, 151, 335  
White, Helen 75  
White, Michael 46, 49  
White, Stephen 295  
White, William 174, 178, 179, 200  
Wichtrich, Al 129  
Wiedling, Tor 250  
Wiess, Lizette 184  
Wiggins, Robert 150  
Wild, John 25  
Wildavsky, Aaron 15  
Wilhelm, John 270  
Wilhelmy, Jerry 139  
Wilke, Charles 50, 52, 328  
Wilkes, Daniel 33, 42, 96, 97, 98, 114, 182, 204, 266  
Wilkes, Evelyn 96, 264  
Wilkes, Shelley 96, 264  
Wilkinson, Geoffrey 276  
Willard, Beatrice 315  
Williams, Arleigh 303  
Williams, Charles 68  
Williams, Howard 189  
Williams, Leon 60  
Williams, Oren 50  
Williams, Robley 62, 189  
Williams, Ted 53  
Williamson, Stanley 301  
Willingham, William 168  
Willrich, Mason 131, 212, 238, 312, 350  
Wilson, Garff 30, 46, 81, 279, 303, 345  
Wilson, Harold 102  
Wilson, Hugh 25  
Wilson, Jane 46  
Wilson, Richard 59  
Wilson, Robert 52  
Wilson, William 306, 308  
Wilt, Fred 55, 80  
Winterson, Howard 311, 315  
Wise, Rick 96  
Wiser, Sally 98  
Wivstad, Ingvar 311, 314  
Woerner, Sarah 150  
Woldseth, Rolf 6, 33, 176

Wolf, Daniel 54  
Wolfe, Deborah 74, 76, 109, 154, 313, 338  
Wolfe, Eugene 225  
Wolfe, Richard 306, 321, 323, 324, 329, 336, 343  
Wolfe, Roger 125, 318  
Wolfman, George 53  
Wolfsberg, Kurt 132, 195, 287, 296, 299  
Wolfsberg, Max 296  
Wong, C. Y. 91  
Wong, Carol 290  
Wong, Cathy 150  
Wong, Eugene 346  
Wong, Felix 305  
Woo, Edward 6, 319  
Wood, Frank 108  
Wooden, John 199  
Woodson, Benjamin 317  
Woolridge, Clyde 143  
Worley, Allen 360  
Wortman, Sterling 185  
Wouk, Herman 64, 190  
Wrench, William 75  
Wright, Christopher 186  
Wu, Anna 60  
Wu, Douglas 134  
Wygard, Edward 129  
Wyly, Charles 359  
Wyly, Sam 359  
Yamaguchi, Kay 203  
Yang, Ying 345  
Yee, Franklin 281  
Yeomans, William 29, 31, 76  
Yinger, Paul 94  
Yolken, Joan 75  
Yolken, Lauren 75  
Yolken, Thomas 75  
York, Carl 218, 263  
York, Herbert 45, 288  
Young, Charles 92, 117  
Young, Daniel 360  
Young, David 349  
Young, Debbie 41  
Young, John 101  
Young, Mrs. Herbert 150  
Young, Roy 109  
Young, Steve 34, 80  
Young, William 67  
Youngberg, Elton 326  
Younger 70  
Zachariasen, W. H. 141  
Zackay, Victor 54, 77, 115, 191, 266, 307, 309, 325, 346  
Zadeh, Lotfi 293  
Zafiris, Jeff 116, 118, 259  
Zakharov, Andre 239  
Zaklad, Haim 176  
Zalkin, Allan 103, 291

Zarem, Abe 309  
Zinberg, Dorothy 338  
Zinn, Walter 120, 189  
Zinner, Paul 79  
Zion, William 261  
Zipf, George 315  
Zoba, Jane 348, 353  
Zolotov, Yu. A. 234  
Zucker, Al 23  
Zuckerman, Peter 68  
Zustak, Frederick 60  
Zvara, Ivo 82, 195, 220, 236, 245, 349



LAWRENCE BERKELEY LABORATORY  
UNIVERSITY OF CALIFORNIA  
INFORMATION RESOURCES DEPARTMENT  
BERKELEY, CALIFORNIA 94720