

# F. A. S. NEWSLETTER

Volume 18, No. 2

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to provide information and to stimulate discussion. Not to be attributed as official FAS policy unless specifically so indicated.

## Seaborg Discusses Civilian Nuclear Power

*Glenn T. Seaborg, Chairman of the U. S. Atomic Energy Commission, discussed the future of atomic energy for civilian use in a speech in San Francisco on December 1, 1964. In the following excerpts, he explained how requirements for electric power compare with reserves of low-cost uranium.*

In the United States, total energy requirements have been increasing at a rate of about 3½% a year, and the requirements for electricity generation have been increasing at an average of about 7% a year. This means that our requirements for electricity in 1980 should be about 2.8 million million kilowatt hours and that the installed capacity then should be about 550,000 megawatts as compared with our present capacity of about 220,000 megawatts.

The Government is constantly refining the estimates for the future use of nuclear power, and whereas a year ago it was believed that nuclear capacity in 1980 would be 40,000 megawatts, the Federal Power Commission now believes that the nuclear power capacity in 1980 will be on the order of 70,000 megawatts versus our present capacity of 1,100 megawatts. This 1980 nuclear capacity thus represents some 13 to 14 percent of the projected total electrical energy capacity.

A very large portion of the 1980 output will be from plants receiving no financial support from the Government, whereas most of the present nuclear generating stations are owned or supported to some extent by the Government. Most of the installed nuclear capacity in 1980 will be in the form of light water reactors, but as far as the Commission's civilian nuclear power program is concerned, we will be concentrating by that time almost exclusively on the development of high-gain breeder reactors—our advanced converter program of today will have reached commercial fruition.

By about 1980 we will be enjoying the full benefits of the research and development effort which the Government and industry have expended on the water reactors in the 1950's and early 1960's, but unless reactor systems of higher conversion ratio are operational, we could be consuming our low-cost uranium reserves at a rate much higher than we can afford. Should we deplete our low-cost uranium reserves prior to the time when we have established a commercially competitive breeder economy, capable of supplying its own expanding needs for fissile materials, we could be faced with a significant increase in the future cost of nuclear power.

The future high-gain breeders will have to be economically competitive in order to be widely adopted and there are significant technical problems to be solved before this objective can be reached. Our national program should not be based entirely on the assumption that such systems will be developed and introduced into the commercial market in time and on a scale sufficient to our long range needs. We must place a reasonable emphasis on the simpler and more easily exploitable technology of near-breeders and low-gain breeders in order to buy the time necessary for the development of the high-gain systems of the future.

## British Disarmament Policy Clarified for FAS

*In response to questions from the editor about the policy of the Labor Government of Great Britain on disarmament, the Minister of State for Disarmament, Lord Chalfont, made the following statement for publication in the Federation of American Scientists Newsletter:*

I should like to thank you for the interest you have shown in British policy towards disarmament. Disarmament is a problem of fundamental concern for the whole world, and I believe Her Majesty's Government have an important part to play in overcoming the deadlock which now appears to confront the 18-Nation Disarmament Conference at Geneva.

The importance which Her Majesty's Government attach to progress in disarmament has been shown by the appointment of a Minister with special responsibility in this field, by the establishment of an Advisory Panel to draw on the knowledge and experience of outside experts, and by the establishment of the Foreign Office Arms Control and Disarmament Research Unit to undertake deep and urgent studies of the problems involved.

As a new Government we are taking a new look at these problems. In our view, defence and disarmament are interdependent. As my Prime Minister said in the House of Commons: "a defence policy which does not contain within itself the seeds of future progress towards disarmament is one which in the present state of the world we can no longer regard as appropriate". But progress will not be easy. We must take account of the importance of maintaining collective security and must proceed in consultation with our allies. Nevertheless, we believe that the deadlock can be broken.

The most urgent task, in our view, is to prevent the further spread of nuclear weapons. The recent explosion of a Chinese nuclear device has underlined the vital need to secure an agreement which would both bind nuclear powers not to transfer to non-nuclear powers either nuclear weapons or information, and also bind non-nuclear powers not to manufacture or seek to control nuclear weapons. We intend to pursue this actively. Equally important is the need for an extension of the partial Test Ban Treaty so that it applies to all countries and covers all forms of nuclear tests, including those underground. We believe that recent scientific advances will allow us to reduce the number of inspections needed for the signature of a comprehensive treaty.

In addition we hope to see progress on other collateral measures, in particular President Johnson's imaginative proposals for the freezing of strategic nuclear delivery vehicles. This might in our view be usefully combined with some actual destruction of weapons on the lines of the proposed 'bomber bonfire'. In general we shall explore any collateral measures which offer a chance of progress.

Consideration of such measures will not however allow us to be deflected from the ultimate aim of general and

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## BRITISH DISARMAMENT POLICY

(Continued from page 1)

complete disarmament. This remains the goal of Her Majesty's Government's policy; Verification or inspection is one of the major problems in the field; here we think much research can usefully be done, and we intend to do it.

As regards the economic consequences of disarmament, we do not foresee any insuperable problems for the economy of the United Kingdom, given an adequate period of readjustment, as provided in the U.S. outline treaty. A much greater disarmament operation was successfully carried through in 1945 and 1946. With forethought and planning the resources released by disarmament could divert to more positive social ends the huge sums now devoted to military purposes.

## INVESTIGATION OF SNOOPING BEGINS WITH GOVERNMENT

Two congressional subcommittees are conducting inquiries into violations of privacy by the unrestricted sale of electronic snooping devices. Federal laws on invasion of privacy is almost non-existent, and those state laws which exist are frequently vague and antiquated by technological advances. Congress passed a law in 1934 providing stiff penalties for wiretapping, but wiretapping is practiced with impunity and virtual immunity from federal prosecution.

The Congressional committees concerned with the proliferation of snooping devices are the Senate Judiciary subcommittee on administrative practices, headed by Senator Long of Missouri, and the special House government operations subcommittee.

Bernard Fensterwald, counsel for the Senate subcommittee, said that last fall a detailed, five-page questionnaire concerning invasion of privacy was sent to 34 Government agencies. He said that returns so far indicate that phone monitoring, peepholes, hidden recorders, and miniature transmitters are the primary snooping practices used in the government.

The devices generally available to the public frequently are not so sophisticated, but the same results can almost always be obtained. Even the most sophisticated equipment is available to anyone with the money. (*Washington Post*, 2/14/65)

### FAS NEWSLETTER

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Chairman.....Dr. Peter G. Bergmann  
The FAS Newsletter is prepared in Washington.  
Editor: Judith Eckerson

The FAS, founded in 1946, is a national organization of scientists and engineers concerned with the impact of science on national and world affairs.

Sources of information (given at the end of articles in parentheses) are for further reference. Items reprinted directly from other publications are designated as such in an introductory paragraph.

## JOHNSON ON NSF, COMSAT, AND IAEA

*The following report of President Johnson's comments is condensed from an article in the New York Times, February 16, 1965.*

In transmitting annual reports on the National Science Foundation, the Communications Satellite Corporation and United States participation in the International Atomic Energy Agency, Mr. Johnson sounded a major theme of his quest for a Great Society.

"Close and understanding accord between science and public affairs is an imperative for free societies today," he said in a message accompanying the foundation's report.

"As I am so acutely aware, no national policy or purpose of the United States is unaffected by the present state or prospective scope of our scientific knowledge."

At the end of World War II "the advance of science was a source of pervading pessimism in our land—and around the world," the President said.

### *Fears of Extinction*

"There were fears that the onrush of man's knowledge would outrun man's wisdom and speed humanity toward its own extinction," he declared.

The United States committed itself to the development of science for peace with the establishment of the foundation in 1950, the President said, "and now our times are marked and moved by an optimism and hopefulness rare in all the history of mankind."

Science will be looked to for use in technology and industry, health programs, exploration and, "most especially, for the guidance that will permit us to proceed with greater security and greater confidence toward our goals of peace and justice in a free world," Mr. Johnson said.

### *An Administration Theme*

The idea that science is greatly affecting the course of society and that society must in turn control the course of science is becoming a favorable theme with the Administration.

The President said:

"As no other force has contributed more materially to our effective pursuit of happiness in America, so it is true that no other force is now requiring of us the more careful examination and re-examination of the workings, values and aspirations of our society.

"Science is changing many of the very premises on which our greatly successful American society has been built over the past two centuries.

"If we are to strive toward our society's continuing success and further greatness, we must not merely commit ourselves to its support—we must involve ourselves in seeking to understand the profound changes which it promises."

### *Science Impact Noted*

Dr. Leland J. Haworth, the foundation's director, sounded somewhat the same theme in a statement accompanying his report.

"In the span of less than a single lifetime," Dr. Haworth said, "virtually every aspect of our society and our personal lives has been vitally affected by the tremendous new impact of science and technology.

"It has become obvious to most Americans," he said, "that continued progress in science and technology is essential to

(Continued on page 3)

RECENT PUBLICATIONS

JOHNSON ON NSF, COMSAT, AND IAEA

(Continued from page 2)

AMERICA'S NEW POLICY MAKERS: THE SCIENTISTS' RISE TO POWER, by Donald W. Cox. Philadelphia: Chilton Books, 1964. \$6.95.

The second half of the title of this book may seem premature to many scientists, but the text establishes that scientists are indeed a much more powerful group than they were in this country in 1940, for instance. The chapters are mainly concerned with chronicling the development of the office of Presidential Science Advisor, the increasing employment of scientists by the Department of Defense, and the increasing frequency with which congressional fact-finding committees question scientists. There are several chapters devoted to the Atomic Energy Commission, its evolution and authority. And not without representation in the discussion are non-governmental groups which have attempted to shape the trends in government, including the Federation of American Scientists. Some of the questions raised by the author seem meaningless, "Should scientists run for public office?", or irrelevant, "How can we increase the prestige of our scientists in politics?", to the main problem. A small minority of people, many of whom are scientists, most of whom are in the sphere of government, have control of military weapons, strategy, and technical secrets beyond what the man-in-the-street has the power to imagine. Yet the forms of republican government struggle to ingest this group and its implications, and to retain integrity. Can it be done, or do the changes in technology, education, and the physical world of the developed nations, demand new forms, new policies, and new guarantees to citizens? This book provides much of the historical background for the central question, but scarcely a hint of an answer.

The chapter on scientific freedom versus secrecy is useful insight into the problem, and most of the book is helpful in condensing news of scientists-in-government for the past 20 years. One seems, however, to be reading several hundred pages of newspaper feature stories with no underlying philosophy.

THE SILENT EXPLOSION, by Philip Appleman. Boston: Beacon Press, 1965. \$4.95.

Population is world's most pressing problem, says the author of this volume. He spends half the book in quoting terrifying statistics, and implies that he could have continued long after he stopped. For five years, the increase in food production in the world has been falling farther and farther behind the increase in people. To those who answer that a rising standard of living in the world will bring fewer babies to under-developed countries, the author coldly explains that even in a country such as India, where every effort is being made to industrialize and modernize, the population growth has kept the per capita improvement in living standard to a \$1 increase per year during the last ten years!

The second half of the book is concerned with two institutions whose opinions on birth control seem most important to the author: the Catholic Church, and Communism. Perhaps his plan of presenting these two together, and ignoring many other institutions, is unfortunate, and perhaps his assumption that the Catholic Church has a great influence on this problem (particularly in Asia and Africa) is faulty, but the presentation of the population explosion as a power-struggle, a political rather than a medical problem, is a perspective as valid as others.

The fact that no remedy for the population problem whatever is presented in this book does not diminish its value, for apparently it had one purpose only: to focus on population as a misused instrument of some national and institutional policies. A new look at foreign aid, and its self-defeating function in countries with runaway population problems, is well documented and understandable to non-economists, also.

further development in pursuit of the American dream, or the 'Great Society,' as it has recently been described.

"It has also become inescapably clear that the Federal Government must continue to shoulder a substantial share of responsibility to insure that the pace of progress does not falter. The principle of government responsibility is accepted, and we are faced with the task of making the wisest possible decisions concerning the direction and intensity of support for science and education."

In a message accompanying the report on the Communications Satellite Corporation (Comsat), the President said the goal of the United States was "to provide orbital messengers, not only of word, speech and pictures, but of thought and hope" for the world.

The corporation plans to launch the world's first commercial satellite, called the Early Bird, next month. Twenty-eight nations have signed agreements leading toward a global communications satellite network to be managed by Comsat.

The President noted that the Government would use the commercial satellite network for all but military command and control traffic. The Defense Department is developing its own satellite system for this.

The President, in transmitting the report on the nation's participation in the International Atomic Energy Agency, sent a covering letter rather than a message.

Unlike the Comsat and Science Foundation reports, which covered the year just past, the Atomic Energy Agency report dealt with the calendar year 1963. It was prepared by the State Department.

It said 1963 "will possibly be marked in I.A.E.A. history as the year in which a firm foundation was laid for its system of safeguards against the diversion of materials to military use."

Since the agency took steps toward international inspection of all nuclear reactors, the United States has voluntarily placed a reactor at Rowe, Mass., under this inspection policy. It is the first large-scale commercial power plant to be subjected to international safeguards.

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## GENEROUS SPACING IS PLANNED!

The following paragraph is reprinted from the November 1964 issue of the University of Chicago *Administrator's Notebook*. The entire issue was devoted to the planning of future adaptation to an industrial society with a growing population.

While the geneticists and family authorities contemplate man's biological and moral evolution, metropolitan planners and big city architects are conjecturing about man's physical environment in the centuries ahead. Some of their proposals for relating urban land forms to urban cultures appear at first blush to be equally as preposterous as Huxley's fantasy seemed in 1932. Kevin Lynch suggests that the core city of the future might even become "solid," with a continuous occupation of space in three dimensions and a cubical grid of transportation lines. This plan could cram a metropolis within a surprisingly small compass: twenty million people, with generous spacing, could be accommodated within a cube less than three miles on a side. Core cities inhabited by twenty million or more human beings are difficult to comprehend. Nevertheless, many life processes as we know and understand them today will continue. The problems of adjusting to these new circumstances will be minimal if the planned development of the moral, intellectual, and physical capacities of the human race proceeds simultaneously with modification of man's ecology.

## CALL FOR BACK ISSUES

Note: The FAS does not have a complete file of its own Newsletters. We would like to compile one, and would appreciate the contribution of any back issues more than 2 years old. Any member who has a complete file and does not want to part with it, will receive thanks if he sends us his name and address, so that we will know where such a file exists. Mail copies to FAS headquarters.

## DEADLINE FOR BALLOT

The enclosed ballot for members must be postmarked by MARCH 31, 1965 in order to be valid. Do not put off voting!

## FAS NEWSLETTER

Federation of American Scientists  
Suite 313  
2025 Eye Street, N.W.  
Washington, D. C. 20006

Volume 18, No. 2

February, 1965

## CLEAN WATER BILL PASSES SENATE

The first item of President Johnson's legislative program to win floor approval in either house of Congress was a clean-water bill which passed the Senate on January 28. The vote was 68 to 8. The bill authorizes federal grants to assist research and improve facilities for prevention of water pollution. It would be administered by the Department of Health, Education, and Welfare, working with state and local agencies.

The antipollution program provides an additional assistant secretary to help the Secretary of HEW administer the act. A Federal Water Pollution Control Administration would be created to help provide programs, effect interstate cooperation and uniform laws, enforce the regulations, and control pollution from federal installations.

Grants of \$20 million would be authorized for the rest of the current fiscal year and the three succeeding years, for research into and development of new or improved methods for the control of combined storm and sanitary sewers. (*N.Y. Times*, 1/28/65)

## WASHINGTON POST POINTS OUT MISCALCULATION ON FALLOUT

The test-ban treaty signaled the beginning of the diminution of fallout, or so everyone expected. The *Washington Post*, however, in an editorial on February 14, 1965, pointed out that the radioactive material found in the bodies of northern Eskimos has been increasing—and, in fact, has doubled in the past two years. Radioactivity collects in the lichen, which is eaten by Caribou, which are eaten by Eskimos, and each step in the chain of events serves to further concentrate the dose of radioactivity. The radiation is more persistent than anyone anticipated, and the accumulations are now expected to continue their increase before the expected decrease begins. The editorial concluded, "The farther we part the veil of ignorance that has limited our knowledge of this phenomenon the more appalling the prospect appears." (*Washington Post*, 2/14/65)

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**RICHARD FALK**, Princeton, N. J. Assoc. Prof International Law, Princeton University. BS U. of Pennsylvania 52. Yale Law 55. Js.D. Harvard 62. Coll of Law Ohio State University 55-61. Princeton 61-present.

**PHILIP JASTRAM**, Columbus, Ohio. Assoc Prof Physics, Ohio State University. SB Harvard 43. PhD Michigan 48. Res Assoc Rad Lab, Harvard 43-45. Instr Michigan 47-48. Res physicist, U.S. Navy Proj. 49. Asst Prof Washington (St. Louis) U. 49-54.

**MARTIN KAMEN**, San Diego, California. Prof of Biochemistry, University of California at San Diego. BS Chicago 33. Univ. Fel Chicago 34-36. PhD Chicago 36. Fel Nuclear Chem, Rad Lab, Calif 37-39. Res Assoc 39-41. Assoc Prof Chem Mallinckrodt Inst 45-57. Sr Fel NSF 56. Manhattan Proj 43-44.

**GARDNER MURPHY**, Topeka, Kansas. Psychologist and Director of Research, Menninger Foundation. BA Yale 16. AM Harvard 17. PhD Columbia 23. Lectr, Instr, and Asst Prof Columbia 21-40. Prof CCNY 40. UNESCO Consultant to Min of Ed, New Delhi 50. Pres of APA 43-44. Author of *In the Minds of Men*, and psychology texts.

**LOUIS OSBORNE**, Cambridge, Mass. Associate Prof Physics, MIT. BS Cal Tech 44. PhD MIT 50. Res Assoc, Group Supvrs of Synchrotron Lab, and Assoc Prof 49-present. Guggenheim and Fulbright Fels.

**RICHARD PRESTON**, Argonne, Ill. Physicist at Argonne National Laboratory. BA Wesleyan 49. MA Wesleyan 50. MS Yale 52. PhD Yale 54. Assoc Director Geochronometric Lab Yale 54-55.

**JOHN RASMUSSEN**, Berkeley, Calif. Assoc. Prof of Chemistry, Univ of California. BS Cal Tech 48. PhD California 52. Instr Chem Rad Lab, Calif 52-53. Asst Prof California 53-57. Vis Prof Nobel Inst, Stockholm 53.

**KENNETH SCHICK**, Schenectady, New York. Asst. Prof Physics, Union College. BA Columbia 51. PhD Rutgers 59. Physicist U.S. Naval Air Missile Test Center 51-52.

**TOM STONIER**, New York, N. Y. Physiology, Manhattan College. AB Drew 50. Hooker Fel Yale 50-51. MS Yaye 51. PhD Yale 55. Jr Res Assoc Biologist, Brookhaven 52-54. Vis Investigator, Rock Inst 54-57.

**LAWRENCE WILETS**, Seattle, Wash. Assoc. Prof Physics, Univ Washington. BS Wisconsin 48. MA Wisconsin 50. PhD Wisconsin 52. Atomic Engy Cmn Fel, Princeton 49-51. Proj. Matterhorn, Princeton 51-53. Rad Lab, Calif 53. NSF Fel, Inst Theoretical Phys, Denmark 53-55. Weizmann Inst, Israel, 61-62.

**MARVIN WINKLER**, Jamaica Plain, Mass. Assoc Investigator, Protein Foundation. BA NYU 49. MS NYU 51. PhD NYU 54. Res Assoc Immunochem, Roswell Pk Mem Inst 54-58. Asst Invest Protein-Foundation 58-61. Vis Assoc Chem Harvard 59-present.

**MAIL THIS BALLOT IMMEDIATELY**  
**All Ballots Must Be Postmarked**  
**By March 31, 1965**

(Detach, Refold, and Seal with scotch tape or staple)

**NOTE:** The Elections Committee will detach panels bearing voter's signature before tabulating, to assure secret ballot.

Vote for only one (1) candidate for chairman and for only one (1) candidate for vice-chairman by placing an "X" before his name:

**CHAIRMAN**

.... Donald G. Brennan                      .... W. A. Higinbotham

**VICE-CHAIRMAN**

.... John T. Edsall                              .... Donald N. Michael

**COUNCIL DELEGATES-AT-LARGE**

Vote for twelve (12) candidates by placing an "X" before the names you select. **NOTE:** You may cast votes in favor of the defeated candidate for Chairman and/or vice-chairman, if you so desire.

.... Ralph Amado	.... Louis Osborne
.... James Arnold	.... Richard Preston
.... Lyle Borst	.... John Rasmussen
.... Judith Bregman	.... Kenneth Schick
.... Michael Brower	.... Tom Stonier
.... Richard Falk	.... Lawrence Wilets
.... Philip Jastram	.... Marvin Winkler
.... Martin Kamen	.... defeated Chairman
.... Gardner Murphy	.... defeated Vice-Chairman

**ELECTION OF OFFICERS AND COUNCIL DELEGATES—FEDERATION OF AMERICAN SCIENTISTS**

The Chairman and Vice-Chairman are chosen by the entire membership in this election. The remaining officers and members of the Executive Committee are elected by the Council at its spring meeting. Simultaneously with this election, the whole membership annually elects 12 delegates-at-large to serve 2-year terms on the national policy-making Council. The Council is made up of the Chairman, Vice-Chairman, and 2 past chairmen of FAS, one delegate from each of the 10 chapters, and 24 delegates-at-large. Chapters are located at Brookhaven, Chicago, Los Alamos, Los Angeles, Berkeley, Philadelphia, Pittsburgh, Schenectady-Troy, Stanford and Washington, D. C.

Marvin Kalkstein, Chairman, Elections Committee.

**DONALD N. MICHAEL**, Washington, D. C. Resident Fellow, Institute for Policy Studies. SB Harvard 46. MA U. of Chicago 48. PhD Harvard 52. Has been consultant to UNESCO, Dept of Defense, Com on Disaster Studies of Nat Res Coun. Was staff member of the Brookings Inst; directed study proj for NASA on peaceful space activities. Author of *Cybernation: the Silent Conquest*.

**NOMINEES FOR DELEGATE-AT-LARGE**

**RALPH AMADO**, University Park, Pa. Asst Prof Physics 59-present, U. of Pa. Res. assoc. U. of Pa. 57-59. BS Stanford 54. PhD Oxford 57. Consultant Radiation Lab, U. of Calif.

**JAMES ARNOLD**, San Diego, California. Prof of Chemistry, University of California at San Diego. AB Princeton 43. MA Princeton 45. PhD Princeton 46. Manhattan Proj 43-46. Fel INS Chicago 46. Nat Res Fel Harvard 47. Asst Prof INS Chicago 48-55. Asst and Assoc Prof Princeton 55-58.

**LYLE BORST**, Buffalo, N. Y. Prof Physics, Univ of Buffalo. AB U. of Ill. 36. AM U. of Ill. 37. PhD U. of Chicago 41. Clinton Labs, Oak Ridge, Tenn. 43-46. Asst. Prof Chem, MIT 46. Chairman Dept Reactor Sci and Engrng, Brookhaven Nat Lab 46-51. Prof Physics, U. of Utah 51. Chmn Dept Physics Coll Engrng NYU.

**JUDITH BREGMAN**, Brooklyn, N. Y. Prof Physics, Brooklyn Polytechnic Inst. AB Bryn Mawr 42. PhD Cornell 50. Barnard Coll 46-48. MIT 49-54. Med Sch Harvard 54-55. Weizmann Mem Fel 58-59. Worked on Manhattan Proj.

**MICHAEL BROWER**, Cambridge, Mass. Asst. Prof at MIT Sloan School of Industrial Management. BS Antioch 55. MA Harvard 59. Expects PhD Harvard 65. Teaching Fel Econ and Gov, Harvard 58-61. Instr MIT 59-64. Asst. Economist U.S. Congress, Joint Com on Economics 59-60.

**Identifying Notes on Nominees**

**NOMINEES FOR CHAIRMAN**

**DONALD G. BRENNAN**, Harmon, N. Y. Mathematician, Hudson Institute, 62-present (Pres 62-64); MIT Lincoln Lab 53-62. Ph. D. MIT 59. FAS member since 54. Editor *Arms Control, Disarmament, and National Security*, and other books on arms control.

**W. A. HIGINBOTHAM**, Upton, N. Y. Physicist, Brookhaven National Laboratory. AB Williams Coll 32. Cornell 32-40. Radar research MIT 41-43. Manhattan Proj 43-45. Inventor Higinbotham scaler circuit. FAS Chairman 46, 50.

**NOMINEES FOR VICE-CHAIRMAN**

**JOHN T. EDSALL**, Cambridge, Mass. Biochemistry, Harvard, 28-present. Prof since 51. AB Harvard 23. MD Harvard 28. Fulbright lectr Cambridge 52. Vis Prof Coll de France 55. Rep on U.S. Nat comm for UNESCO. Mem Biochem Soc Great Britain, APS, AAAS, Nat Acad Sci.

**BALLOT WITHIN**

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