to Italy, "carrying this work to Naples with me."

In Naples, Tarro, who is described by his friends and associates as a shy, retiring young investigator, worked under a grant from the cancer institute which, Sabin says, he got because he (Sabin) would continue to be associated with the project. By the late fall of 1972, Tarro's work in Naples had progressed so far that he was able to say that there was a clear relationship between herpesviruses and several human cancers. Says Tarro, "In November, we got some very nice results. When I communicated them to Sabin—he was the first person to be informed—he said they were 'too good to be true.' " In February, Sabin sent a joint Sabin-Tarro paper off to the *Proceedings*, where it was published in the April issue. Sabin, who was by this time back in the United States, also asked Tarro to come to this country for a stay in his laboratory at the Frederick center. Tarro arrived in February and will return to Italy soon.

According to Tarro, the work he and Sabin did at Frederick was a "repetition" of the work he did in Naples, although it was done with more "sophisticated" equipment and with different controls. A travel order to Tarro from Robert A. Manaker of the NCI partially supports Tarro's contention that the work he did in the last 3 months essentially duplicated previous work: "Dr. Tarro will participate in a collaboration with investigators at the Frederick Cancer Research Center to verify and extend observations made on human cervical carcinoma patients by techniques developed by Dr. Tarro in Naples."

Once back in Italy, Tarro hopes to continue his research along the same lines he has been pursuing and to continue his collaboration with scientists in this country, including Hollinshead, even though Sabin is reportedly less than pleased about that. When asked, Tarro tactfully says he believes his work with both individuals is equally important.—BARBARA J. CULLITON

NAS and APS Meetings: Changes in Moods and in Modes

The National Academy of Sciences (NAS) and the American Physical Society (APS) both met in Washington in the week after Easter. Beyond the coincidence of time and place it is fair to say that the meetings shared a common mood. The truce in Vietnam is generally regarded as the principal cause of a muting of the voices of protest that have been heard at so many scientific meetings in recent years and finally had disturbed the even tenor of the academy's ways. Particularly at APS there seems to be new interest and energy directed to exploring ways to work within the system.

National Academy of Sciences

The National Academy of Sciences devoted its spring meeting this year mainly to commemorating the 500th anniversary of the birth of Copernicus and to discussing the scientific revolution he did much to initiate. On more immediate problems facing science and society, the academy members also tended to take the long-range view.

It would be unfair to suggest that the academy has relapsed into the complacency of the past. A lot has happened to the academy in recent years, and it is now in a period of consolidating the changes that have been made; the members are in no mind to see any major rocking of the boat.

Asked to characterize the atmosphere of this year's meeting, academy president Philip Handler replied, "Quiet." Handler says he feels that for several years the problems that were on the minds of many members had their origins in the Vietnam war. "The matter of our relationship with the military—classified activities—has been regularized. As far as I know this has satisfied the concerned portion of the membership."

The issue of secrecy of the military work accepted by the academy was the cause of sharpest dissent among academy members in recent years. As a result of the criticism, the academy last year adopted new rules on classified work which essentially provide that members be informed of the nature of classified work before the academy accepts it and creates machinery through which members can protest and have a particular contract rejected.

The debate over classified work and the compromise reached led to the resignation of two members critical of the situation, Richard Lowentin of the University of Chicago and Bruce Wallace of Cornell. Technicalities had left the resignations in limbo until this year's meeting, but the academy council this year clarified the situation by changing the bylaws to provide a direct means of resigning and also, so to speak, left a light in the window by adding that a resigned member may be reinstated after not less than 4 years by a two-fifths vote of the council.

What seemed to concern members most this year, according to Handler, was the "funding of the scientific endeavor." He said that "the most acute concern was expressed by biomedical researchers." He suggested that this may be the case because "others felt the pressure earlier."

On another internal matter that has troubled the academy for several years, the members received the formal word that the leadership of the National Academy of Engineering (NAE) was recommending dissolution of its decade-long partnership with NAS (*Science*, 13 April). NAS members received the news calmly and approved a discreetly worded resolution inviting NAE to cooperate with NAS in matters of "mutual and overlapping concern," and adding that if NAE decides to remain under the NAS charter, "the invitation to do so remains open."

There was really not much else that NAS could do since NAE was scheduled to meet the following week, and the decision to stay or go rests with a vote of the NAE members. In the event that the decision is to stay with NAS—considered against the odds—the two academies would reopen negotiations. These negotiations seem to have stuck mainly on the issue of how the two academies could jointly operate the National Research Council (NRC), the framework organization for the voluntary committees which perform the academy's function of advising the government.

Reorganization and reform of NRC

has been a perennial concern of the academy in recent years, but the problem is now at least in abeyance since a reorganization has begun (*Science*, 30 March), under a plan approved at the academy meeting last year. Handler reported that the reorganization was on schedule and should be completed by the end of year.

If academy members asked only questions of detail about NRC, echoes of criticism reached the academy from across town at the American Physical Society (APS) meeting. The performance of the NRC was the subject of a talk by Philip M. Boffey, who is completing a 2-year study of NAS under the auspices of Ralph Nader's organization. Boffey is a former member of the news staff of *Science* and is now managing editor of the Washington newsletter *Science and Government Report*. Boffey did not summarize his study, but said he would show how particular NRC committees have shown bias. He concentrated particularly on two case studies. In his talk he said

National Academy of Sciences Names New Members

The National Academy of Sciences (NAS) has announced the election of 95 new members in "recognition of their distinguished and continuing achievements in original research." The NAS, established in 1863 by a congressional charter, is a private organization of scientists and engineers dedicated to the furtherance of science and its use for the general welfare.

Saunders Mac Lane, Mason Distinguished Professor of Mathematics at the University of Chicago, was elected to a 4-year term as vice president of the NAS, succeeding George B. Kistiakowsky, who has served in that post for 8 years. Elected to 3-year terms on the academy's governing council were Horace W. Babcock, Hale Observatories; Maclyn McCarty, Rockefeller University; Kenneth S. Pitzer, University of California, Berkeley; and Carroll M. Williams, Harvard University. The retiring councilors are Kinglsey Davis, James V. Neel, James A. Shannon, and Robert L. Sinsheimer.

The following new members, bringing the total membership to 1012, were elected:

Edward H. Ahrens, Jr., Cornell University Medical College
Robert W. Allard, University of California, Davis
Andrew A. Benson, Scripps Institution of Oceanography
Howard A. Bern, University of California, Berkeley
James D. Bjorken, Stanford
Harold C. Bold, University of Texas
John T. Bonner, Princeton
Frederick H. Bormann, Yale
Gordon H. Bower, Stanford
Felix E. Browder, University of Chicago
Donald D. Brown, Johns Hopkins
Arthur E. Bryson, Jr., Stanford
Bernard Budiansky, Harvard
John W. Cahn, M.I.T.
Donald T. Campbell, Northwestern University
Robert M. Chanock, George Washington University
Albert McC. Clogston, Sandia Corp.
Ansley J. Coale, Office of Population Research, Princeton, New Jersey
Philip E. Converse, University of Michigan
George C. Cotzias, Brookhaven National Laboratory
Ellis B. Cowling, North Carolina State
James E. Darnell, Jr., Columbia
Albert Dorfman, University of Chicago School of Medicine
Otis D. Duncan, University of Michigan
Isidore S. Edelman, University of California Medical Center, San Francisco
Walles T. Edmondson, University of Washington
Edmond H. Fischer, University of Washington
Marshall Fixman, Yale
Robert W. Fogel, University of Rochester
Robert E. Forster, University of Pennsylvania Graduate School of Medicine
Donald S. Fredrickson, National Heart and Lung Institute
Gerhart Friedlander, Brookhaven National Laboratory
Milton Friedman, University of Chicago
Theodore H. Geballe, Stanford
Clifford J. Geertz, Institute for Advanced Study, Princeton
James F. Gilbert, University of California, San Diego
Harry Goldblatt, Mt. Sinai Hospital, Cleveland, Ohio
Ludwik Gross, Mt. Sinai School of Medicine, New York
Gordon G. Hammes, Cornell
Zellig S. Harris, University of Pennsylvania
Marion F. Hawthorne, University of California, Los Angeles
David M. Hegsted, Harvard School of Public Health
Robert F. Heizer, University of California, Berkeley
Richard M. Held, M.I.T.
John J. Hopfield, Princeton
Kurt J. Isselbacher, Harvard Medical School
Percy L. Julian, Julian Associates, Inc.
Joseph J. Katz, Argonne National Laboratory
Joseph B. Keller, New York University
Lawrence R. Klein, University of Pennsylvania
William L. Kraushaar, University of Wisconsin
Edwin G. Krebs, University of California, Davis
Aaron B. Lerner, Yale University School of Medicine
Choh H. Li, University of California, Berkeley
Seymour M. Lipset, Harvard
James R. MacDonald, University of Texas
James G. March, Stanford
Paul A. Marks, Columbia
Jacob Marschak, University of California, Los Angeles
Victor A. McKusick, Johns Hopkins University School of Medicine
William B. McLean, Naval Undersea Research and Development Center, San Diego
Stanley L. Miller, University of California, San Diego
Raymond D. Mindlin, Columbia
Marvin L. Minsky, M.I.T.
Beatrice Mintz, University of Pennsylvania
Franco Modigliani, M.I.T.
Yoichiro Nambu, University of Chicago
Gerry Neugebauer, California Institute of Technology
Bernard M. Oliver, Hewlett-Packard Co.
Alwin M. Pappenheimer, Jr., Harvard
Robert G. Parr, Johns Hopkins
Rowland Pettit, University of Texas
David Pines, University of Illinois
John M. Prausnitz, University of California, Berkeley
Charles H. Rammelkamp, Case Western Reserve
Simon Ramo, TRW, Inc.
Helen M. Ranney, State University of New York, Buffalo
Lester J. Reed, University of Texas
William L. Russell, Oak Ridge National Laboratory
Jarvis E. Seegmiller, University of California, San Diego
Irving E. Segal, M.I.T.
Richard B. Setlow, Oak Ridge National Laboratory
Robert P. Sharp, California Institute of Technology
H. Guyford Stever, National Science Foundation
Julian M. Sturtevant, Yale
Helen B. Taussig, Johns Hopkins Hospital
Kip S. Thorne, California Institute of Technology
William Trager, Rockefeller
Merton F. Utter, Case Western Reserve
Cecil H. Wadleigh, U.S. Department of Agriculture
Robert M. Walker, Washington University, St. Louis
Anthony F. C. Wallace, University of Pennsylvania
Donald E. White, U.S. Geological Survey
Gilbert F. White, University of Chicago
Maxwell M. Wintrobe, University of Utah School of Medicine.

that "These studies—one involving the SST and the other involving food chemicals—indicate that the independence and objectivity of academy committees are often subverted by special interests. Sometimes, as in the case of the SST, they fall captive to the thinking of the government agencies which contract for their services. Other times, as in the case of the academy's food protection committee, they fall prey to industrial interests."

Boffey, in his APS talk, went into most detail in discussing the role of academy committees in advising the Federal Aviation Agency (FAA) on the development of the supersonic transport. He stressed several incidents, the first in 1964 at the time an academy committee was hurriedly brought in when sonic boom tests in Oklahoma City were encountering stiff public opposition and legal action. Boffey said the committee showed a disquieting tendency to place itself on the FAA's side of the controversy instead of acting as an independent source of advice. In summary he said

> To begin with, the Academy had allowed itself to be used by the government to head off public opposition to the Oklahoma City tests. It had not been asked, nor had it sought, to play a role in the sonic boom problem earlier. Once involved in the project, the Academy had shown a disturbing tendency to line itself up with the sponsoring agency, the FAA, against the agency's critics. This became apparent when the Academy made itself a public relations adviser to the government and when it declined to make any strong statements against overland flights by the SST even though internal documents indicate that the committee felt the Boeing SST would be unacceptably annoying to the public. Then, when a strong and apparently legitimate challenge was made by 189 members of the Academy, the committee had shown an inability to admit error. Whether one thinks that the committee erred on matters of substance or merely wrote a report that was subject to misunderstanding, the Academy had a responsibility to make its position clear. It did so in internal documents but failed to notify the public in any effective way.

Discussing the performance of the academy's food protection committee, which has played a continuing and important advisory role to the Food and Drug Administration, Boffey contended that the committee has displayed a consistent bias in favor of the food industry. He notes instances of apparent conflicts of interest among members of the panel and also said that the committee was overbalanced with scientists concerned with immediate toxic effects rather than long-term teratogenic or mutagenic effects which are becoming increasingly germane in studies of foods and drugs.

In general comments on NAS, Boffey said he recognized that the academy, "by some measures, is the most important source of scientific advice for federal agencies" and acknowledged that much of the committee work is excellent. But he said he felt "a large number succumb to the pressure of special interests."

Reactions of academy officials to Boffey's remarks have generally stressed changes in rules and practices at the academy in recent years, which, they argue, are aimed at preventing contractor pressure and conflict-of-interest situations and at detecting bias in reports themselves. Asked to comment on the Boffey talk, Handler said that he had had time only to glance through it, but that his reaction was, "Relief." He said the talk "recounts a set of episodes, no one of which could now be repeated. If there are no other skeletons in the closet, I am relieved. The NRC has about 500 committees issuing at least one report a year. This is an enterprise conducted by human beings who are fallible." If Boffey's talk is representative of the full study, said Handler, "I can only say that this is just great."

The academy reaction could be premature, since Boffey specified that the themes he chose were intended to be merely illustrative and did not exhaust the subject.

The academy this year named a record 95 new members to raise total membership to some 1011. This is the second year of a 5-year plan of academy expansion designed to raise the total membership ultimately to about 1200. Another 95 members are expected to be elected next year and 85 the following year. In subsequent years the number will decline progressively and level off in 1977 at 60 a year, 10 more than before the expansion plan was adopted. The idea is to increase the total number of members and also the proportion of members in the clinical sciences and social and behavioral sciences in order that the academy can better discharge its advisory responsibilities in an era when interdisciplinary efforts are required.

The election of Andrei D. Sakharov as a foreign associate member is likely to attract more than usual notice. Sakharov is one of three Soviet scientists elected this year, but he is also known as an outspoken advocate of professional and personal freedom in Soviet society and is said to be in official disfavor, despite his considerable contribution to the development of the Soviet hydrogen bomb. Academy officials say Sakharov was elected on his merits as a physicist by the NAS physics section, which is hardly known as a group of political activists. Handler says that Sakharov's election "was not made on a political basis. It was intended to do him honor, nothing more than that. We hope it does not prove to do him a disservice."—JOHN WALSH

NAS Foreign Members

The academy has announced the election of 12 scientists as foreign associates. The new foreign associates, bringing the total to 130, are as follows:

Sune Bergstrom, Sweden
Albert Eschenmoser, Switzerland
Vladimir A. Engelhardt, U.S.S.R.
Dennis Gabor, England
David V. Glass, England
Jean Goguel, France
Motoo Kimura, Japan
George Klein, Sweden
Ben R. Mottelson, Denmark
V. Ramalingaswami, India
Andrei D. Sakharov, U.S.S.R.
I. S. Shklovsky, U.S.S.R.

American Physical Society

During the years of protest over U.S. involvement in Vietnam, the American Physical Society (APS) provided a major example of a professional organization polarized over the role it should play in dealing with political and public-interest issues. Activists sought to prod the APS toward making changes in its rules and structure to make it more active in discussion and advocacy on public issues. The APS leadership, however, largely took the traditional view that the organization should concentrate on publications and meetings and otherwise serve the professional interests of its members. The two sides were most dramatically at cross purposes at the Washington

meeting in 1969, when activists organized a war protest march on the White House.

Attempts at making major changes in the APS constitution did not succeed, but at the same time there has been an evolution toward acceptance of a broader role for the society. The clearest symbol of this evolution is the decision this year by the APS council to support a Congressional Science Fellowship Program with society funds.

The council authorized spending of $35,000 to support up to two physicists as fellows to work for a year in the offices of representatives, senators, or congressional committees. The APS has issued an immediate call for applicants. The APS will select fellows for the program but plans to cooperate with the AAAS and other professional organizations in administering the fellowships. The AAAS is in the process of selecting its own congressional science fellows and will operate a Congressional Fellowship Office in Washington to coordinate the activities of science fellows in the Capital.

The APS science fellowships were proposed by the Forum on Physics, which has an official if still ambiguous status in APS. The forum represents an institutionalization of the liberal, activist wing of the society, and a number of its leaders were involved in organizing the 1969 march on the White House. Forum chairman this year is Martin Perl of the Stanford Linear Accelerator; vice chairman is Barry Casper of Carleton College. Among members of the executive board are Jay Orear of Cornell, who has been associated over several years with efforts to open the APS to action on public-interest issues, and Brian Schwartz of M.I.T., who has acted as program chairman both before and since the forum gained an official place in the program.

This year and last, forum sessions dealing with public-interest questions have been official parts of the program. (The best attended this year were one addressed by Ralph Nader and Philip M. Boffey (see NAS story) and another on science and secrecy at which Edward Teller spoke.) The forum is one of the society's subgroups which requires extra payment for membership. In the case of the forum this is $2. Forum members are said to number about 1500. There is a monthly forum newsletter, and there have been other forum activities such as surveys and reports undertaken by forum members, but the science fellowship program is the most significant, concrete result achieved by the forum to date.

Commenting on the state of the relationship between APS and the forum at a news briefing on the fellowships, Perl said, "It [acceptance of the fellowships] was amazingly fast. The Congressional Fellowship Program puts us over the hump as far as credibility goes."

APS executive director W. W. Havens said, "by establishing a Congressional Fellowship Program, the American Physical Society gives its blessing to this type of activity and encourages physicists to become engaged in public service science. The APS is thus supporting the long-range goal of legitimatizing for physicists activities other than traditional research in universities and industry."

The APS council actually more than doubled the funds originally requested for the program by the forum. Instead of the $16,500 asked in the original proposal, the council voted to spend $35,000 for up to two 1-year fellowships. Officials say APS was able to come up with the sum, at a time when many professional societies are financially hard-pressed, because of economy measures the society took in the late 1960's when it was faced with serious deficits. Savings from a shift to typewriter composition and offset printing for its publications from more expensive methods are primarily credited with making the funds available.

Havens notes that the financial situation will affect the council's decisions about continuing the fellowship program, so that the program has to be regarded as an experiment. Casper at the briefing said, "We eventually hope for an expanded program funded by foundation support."

At the APS meeting this year, the squeeze on the federal funding of science and its effect on the job market for physicists continued to be a matter of worry and discussion.

There is a theory that the recession in science, a common concern of all physicists, both activist and traditionalist, has helped bring the two groups together on the question of broadening APS horizons. Physicists generally now perceive Congress as arbiter of the financial fate of physics and tend to feel that giving physicists practical experience of Congress and vice versa would profit both sides. Those who attend the meetings regularly said there appeared to be fewer younger physicists in the graduate-student and postdoctoral age groups on hand than in the past. This was attributed to the tightness of travel funds provided in federal grants. In addition, there is an impression that a significant number of young physicists who have been unable to find jobs for which they have trained have either dropped out of the job market; others are staying close to the lab doing the research that may get them one of the scarce longer term jobs still going.—J.W.

Hogness to Quit NAS Post in 1974

John R. Hogness, president of the National Academy of Sciences Institute of Medicine, will be leaving his post in about a year to assume presidency of the University of Washington.

Hogness, who became the institute's first director in August 1971, had intended to stay at least through his 5-year term, but he said he "just can't turn down" the Washington offer. He previously spent 21 years at the university, ending up as executive vice president.

The Hogness departure was totally unexpected by all, but he said that the institute is a "vital and vibrant" concern and so stable that it will be able to get along fine without him. He also opined that the job as institute president is the "best job in health in the United States," so the NAS shouldn't have too much trouble finding a successor.

The institute was formed as a top-level body to study all aspects of the nation's health system.—C.H.

Erratum: In "Navy R & D: Will Congress have the nerve to spear Trident?" (20 April, p. 284), the Manchester *Union Leader* is incorrectly referred to as the *Times-Union*.