and diplomatic aspects, Americans should not lose sight of its "self-interest" aspects. After commenting that in his state, which ranks high "in the realm of literacy," his mail runs about ten-to-one against foreign aid, Neuberger urged his listeners to "convince your people that world health and our participation in it is in the interest of world peace. . . . I think we have to put flesh on the skeleton and to show that the people feel that they have an international stake in health. . . ." Then he emphasized that the new program might produce medical discoveries that would prevent death and extend the lives of many Americans. That the United States has no monopoly on scientific development—that major findings have often been made in unexpected parts of the world—was a recurring theme throughout the discussions.

Although most of the formal consideration of the "Health for Peace Act," both governmental and nongovernmental, has emphasized its apolitical character, many of the editorials on the measure have mentioned that the Soviet Union is winning gratitude in many areas of the world by providing medical aid, while in this country such aid is largely in the discussion stage. House hearings on the act have not been scheduled at this writing. However, now that Representative Fogarty is back from the World Health Organization meeting in Geneva, perhaps prompt action can be expected.

NATO Progress in Science

The North Atlantic Treaty Organization's Science Committee and Office of the Science Adviser were established a year ago and are now in full operation. Recently Norman F. Ramsay, scientific adviser to the secretary general of NATO, reported on the Science Committee's activities for the first year of its existence. He pointed out that the committee has studied means for strengthening science among the NATO nations and has already taken action.

Fellowships and Summer Institutes

The largest and perhaps most obvious of its actions is the establishment of the NATO fellowship program. Ramsay observed that since the end of the war there has been a need for more freedom of movement for scientists, both within Europe and reciprocally between Europe and the United States. There has also been a shortage of well-trained scientists. The North Atlantic Council, at the recommendation of the Science Committee, has established about 250 science fellowships, each to be used in a country other than that in which the applicant lives. This number is expected to rise to about 400 next year.

It should be noted that the Department of State and the National Science Foundation have recently announced the award of the first group of 20 NATO postdoctoral fellowships to Americans. The grants will enable fellows to attend institutions in Denmark, Germany, the Netherlands, Norway, Sweden, and the United Kingdom. Of the 20 awards, seven are for research in the life sciences and 13 are for research in the physical sciences. including mathematics and engineering. Each NATO fellow will receive a basic 12-month stipend of $4500. In addition, limited round-trip travel and dependency allowances will be provided.

Another of the NATO Science Committee activities described by Ramsay is the encouragement of institutes and summer schools for study of advanced or special scientific subjects. The organization has now established a fund for the partial support of such institutes. Largely as the result of NATO support, there will be six institutes next summer and even more in subsequent years.

Other Plans Being Considered

Ramsay also said that the pooling of scientific facilities and information for various collaborative programs is under discussion, particularly in deep-sea oceanography, space exploration, and materials research. He pointed out that oceanographic research ships, for example, are too expensive for most NATO nations to finance separately, but not collectively. Furthermore, he added, even when ships are sponsored by individual nations, coordinated studies are more meaningful than separate ones.

Ramsay also suggested that another means by which NATO science might be advanced on a cooperative basis would be through establishment of a comparatively small fund that would be available to provide quick assistance to joint scientific projects that are held up because of lack of money. He explained that a project is sometimes short of special equipment which can only be bought with foreign currency. Ramsay emphasized that a fund available without delay to those who need help is "many times more valuable, price for price, than money that is laborious and slow to administer." He expressed the hope that such a flexible, speedily administered fund could soon be made available.

Defense Science Slowed by Secrecy

He observed that defense science is of obvious importance but that cooperation is often slowed down by secrecy. However, Ramsay commented that during the past year there has been spectacular improvement in the exchange of classified defense research information. He said: "The launching of the Russian Sputnik showed both that the NATO nations could not afford such a waste of scientific effort and that the Russians had probably already discovered much of the information that the NATO nations were so zealously guarding from each other."

Ramsay's report closed with the following statement.

"The problem of science in the Atlantic Community remains a challenge. . . . Compared to the past, the scientific and technical cooperation now existing among the NATO nations is impressive. Yet compared to what is needed to be done, when we think of the swift advance of Russian research—even if Russia has yet to catch up with the West in most subjects—then our efforts are still too slow footed. The present is a beginning but the challenge still remains."

Kistiakowsky Succeeds Killian as Top Science Adviser

James R. Killian, Jr., President Eisenhower's top science adviser for the past year and a half, will leave government service next month. The former president of the Massachusetts Institute of Technology, who is both the Presiden's Special Assistant for Science and Technology and the chairman of the new Federal Council for Science and Technology, will be succeeded, probably in both positions, by George Kistiakowsky, professor of chemistry at Harvard University. In his letter of resignation, Killian said that "compelling personal reasons" were the basis for his action. Replying to the letter, which was submitted 28 May, President Eisenhower said, "It would be impossible for me to overemphasize the importance of your work here. . . ."

Killian Had Major Role

One of the administration's responses after the first Soviet satellite launching in October of 1957 was the creation of a new post in the executive branch of the government. This position—Special Assistant for Science and Technology—was filled, with wide acclaim from the American scientific community, by Killian, who was then president of MIT. During the 18 months since his appointment, Killian, with the support of the Science Advisory Committee, has exerted a profound influence on the planning of this country's scientific efforts. Numerous reports, which, taken together, constitute a thorough review of the role of science in American society, have issued from the Killian committee. One of them, "Strengthening American Science," led to the establishment of the Federal Council for Science and Technology. Others have been concerned with the need for basic research, the role of

science in education, and the feasibility of an atomic test inspection system.

Will Stay on Committee

Killian will continue to be a member of the advisory committee. In this position he will be able to continue working with Kistiakowsky. The new special assistant, who, unlike Killian, is a noted research scientist, has been a member of the committee since 1957. He has served as one of the Administration's chief advisers on the ballistic missile program and has had rather extensive personal contact with the President in this position. He was also a member of the U.S. delegation at the technical talks on surprise attack held in Geneva in 1958.

The new adviser is said to have an out-going personality and a well-developed sense of humor. Anecdotes about him mention that he frequently uses his skill with explosives to solve house-owner problems—for example, to clear land of stumps or to clean a neighbor's cement mixer.

Science Display at Soviet Exhibition

On 30 June the Soviet Exhibition will open at the Coliseum in New York. The large exhibition, which will run until 10 August will have a science section covering approximately 13,000 square feet, which will contain exhibits dealing mainly with the activities of the U.S.S.R. Academy of Sciences. F. R. Kozlov, a First Deputy Premier of the Soviet Union, will open the show, which is part of a cultural exchange between the United States and Russia.

Three large displays in the physics and mathematics section will provide information about important research work—for instance, the work of P. N. Cherenkov, a Nobel Prize winner. An operating unit will demonstrate the glow that he discovered. There will be instruments demonstrating other applications of research in physics, including a machine tool for supersonic treatment of hard and fragile materials. There will also be a display of the uses of transistors, notably a transistorized refrigerator model.

There will be a varied display on Soviet geological and geographic research. The extent of the Soviet Union's mineral riches and the ways in which these minerals are being uncovered will be illustrated in geological and tectonic maps and in collections of ores and minerals. The geographic section will have displays on the exploration of the earth's ice cover and the world oceans. There will be a model of the *Vityaz,* the famous "science ship" which has sailed thousands of miles across the oceans of the world. The exhibits include cross sections of deepwater depressions plumbed by Soviet oceanographers, models of the huge underwater ridges they discovered, and models and drawings showing the strange sea animals caught by Soviet scientists. In addition, the geophysics section will show models of the standard-type seismic stations that were used for research under the International Geophysical Year program.

A special section will illustrate Soviet achievements in organic and inorganic chemistry and will demonstrate discoveries by Soviet scientists in the field of chain reactions and operating instruments used in observing the most delicate and complex chemical processes. The instruments include a mass spectrometer (an instrument for photographing fast-flowing processes at a speed of from 7 million to 33 million frames per second) and an electronic paramagnetic resonance unit. The exhibits devoted to theoretical and practical research in organic chemistry will demonstrate techniques for producing new chemical compounds and plastics, and artificial fibers made from these compounds.

The exhibitors have attempted to make the meaning of scientific research comprehensible to the layman. With this end in view, they have provided a large variety of charts, drawings, sketches, photographs, and color slides, to be shown on special screens. In addition there will be 12 science-fiction films. Also on display will be more than 100 instruments and devices developed by Soviet scientists, and many models.

A special section will be devoted to the work of the History Division of the U.S.S.R. Academy of Sciences. It will deal with historical and archeological subjects. This is the first time that Soviet historical research will have been represented at an international exhibition. A special display, in the form of a huge cylinder about 10 meters in diameter, will be set up, with models, drawings, maps, and so on covering its exterior. Upon entering this structure, visitors will find a well-lit and well-furnished library where they will be able to examine books by Soviet historians and Soviet historical magazines.

Report on Education in Age of Science

A report, titled "Education for the Age of Science," was issued 23 May by the President's Science Advisory Committee. It was written by a 9-man panel on science and engineering education. An accompanying statement by President Eisenhower, the panel's four sets of recommendations, and the panel membership follow.

President's Statement

This report makes clear that the strengthening of science and engineering education requires the strengthening of all education. As an excellent statement of educational goals and needs, I hope it will be widely read and that it will stimulate a wider understanding of the importance of excellence in our educational system.

One subject discussed in the report warrants special emphasis—the importance of raising the standing of our teachers in their communities. Higher salaries are a first requirement, but we need also to recognize the great importance of what teachers do and to accord them the encouragement, understanding, and recognition which will help to make the teaching profession attractive to increasing numbers of first-rate people.

Curriculum and Course Content

Curriculum. We urge the scientists and scholars of the country to establish more intimate contact with experienced teachers at all levels, so the curricula and the teaching and learning aids in schools, colleges and universities may take account of the new facts and the new points of view that scientific progress has revealed.

We further recommend that a research program be established by an appropriate foundation or agency in which scientists, scholars and teachers cooperate to design more adequate curricula planned to give to all educated citizens an adequate introduction to those areas of science and technology essential to an understanding of the problems of a modern society.

Course Content. We recommend that present efforts be aggressively pursued and substantially expanded in bringing together leading scientists, scholars and teachers in these various subject-matter fields to seek:

1) To bring the course content in each subject at each level into line with the most modern scholarly research in its field, consonant with the level of instruction.

2) To outline, write, publish, and revise the necessary textbooks and auxiliary reading materials to achieve the above objectives. We believe, in particular, that far more imagination and innovation is appropriate in the preparation, printing, illustrating and publication of textbooks—on the one hand, to produce much less expensive books in the basic fields so that a much larger number of students will be able to build their own libraries; and, on the other hand, to insure that all the resources of the modern publication art are brought to bear in the preparation of textbooks which are challenging, stimulating, and exciting.

3) To develop and supply adequate teaching and learning aids of all appro-