Athelstan Spilhaus, President-Elect

Athelstan Spilhaus, president-elect of the AAAS, is a man whose boundless energy and wide interests enable him to pursue several careers simultaneously. His success is due in part to a blend of idealism and pragmatism. Spilhaus is an idealist in the sense that his goals for society are large and bold and sometimes appear, at first glance, impractical because of their large dimensions. He is pragmatic, however, in his choice of means for working toward these goals.

Spilhaus was born in 1911 in Cape Town, Union of South Africa. The first school he attended was in a small town near Cape Town. In 1921 his father was named European trade commissioner by Premier Smuts, and the family moved to Europe for 3 years. During this period young Spilhaus went to Berkhampstead School in England. Upon his family's return to South Africa, he completed his high school education and then studied mechanical engineering at the University of Cape Town, where he received the bachelor of science degree in 1931.

After brief employment in the Junkers Aircraft Works in Germany, Spilhaus enrolled at the Massachusetts Institute of Technology, where he received the master of science degree in aeronautical engineering in 1933. From 1933 to 1935 he was a research assistant at M.I.T., doing research on aeronautical and meteorological instruments. In 1935 he returned to the Union of South Africa and became Assistant Director of Technical Services, initiating the first upper-air meteorological investigations in that country. In 1936 he made a memorable and seemingly impossible automobile trip from Cape Town to Cairo, through rugged and wild country. He then returned to the United States and began a career in physical oceanography at the Woods Hole Oceanographic Institution. There he performed model experiments in oceanography and made a significant contribution to oceanographic research through his development of the bathythermograph, an instrument for determining the temperature and depths of ocean water from a moving vessel. This instrument proved highly useful in military applications during World War II.

In 1937 Spilhaus joined New York University, where he started the department of meteorology and was its chairman from 1938 to 1947, with time out for service in World War II. In 1943 he entered the United States Army as a captain and was responsible for coordination of research leading to the development of meteorological equipment. He contributed to, and introduced into the battle zones, electronic techniques for measuring wind and weather disturbances in the upper atmosphere from aircraft in flight. On one occasion he was smuggled into northern China, behind the Japanese lines, to set up a weather station for the Chinese guerrillas. On his discharge in 1946, as a lieutenant colonel, Spilhaus was awarded the Legion of Merit. At this time he became a naturalized citizen of the United States and returned to New York University as director of research, a post he held through 1948. In 1947 he was named meteorological adviser to the Union of South Africa and, in this capacity, reorganized the meteorological service of that country. The University of Cape Town awarded him the doctor of science degree in 1948.

Athelstan Spilhaus

In January 1949, at the age of 37, Spilhaus was appointed dean of the Institute of Technology at the University of Minnesota. He remained in this post until 1966. At Minnesota he stimulated a reorganization of the engineering and science teaching and research activities. His capacity for grasping the essence of a problem—for penetrating to its core through layers of detail—soon became apparent. He was indeed a man of action and was impatient with bureaucratic procedure or detail. As a consequence, he supported and respected faculty members who were recognized as doers. He wanted to appoint strong department heads and faculty, and he allowed such people wide latitude for decision-making. If he disagreed with an action or recommendation, it was rarely, if ever, on the basis of an administrative rule or institutional regulation. In line with this philosophy, Spilhaus had little patience for detail; he was like an artist who paints with broad rich strokes but leaves the finishing touches to others. In general, he did not encourage the use of committees, since he felt that such groups tended, by and large, to stifle creativity and promote conventionality. The Institute of Technology at Minnesota expanded substantially under his direction, and a closer coordination between pure science and engineering has been achieved. While Spilhaus was at Minnesota, mathematics and all physical science departments were moved, administratively, to the Instiute of Technology. This was consistent with his view that mathematics, physical science, and engineering should form a continuum and be housed in the same administrative framework.

During his 17 years as dean of the Institute of Technology, Spilhaus engaged in a prodigious number of outside activities. In 1951 he was scientific director of weapons effects for two Nevada atomic tests and consultant for the Armed Forces Special Weapons Project. For these services he was awarded the Exceptional Civilian Service Medal in 1952. In 1952, also, he was appointed a member of the Baker Mission to Korea. From 1950 to 1959 he was both a member and chairman of the U.S. Army Signal Corps Research and Development Advisory Council and received the Patriotic Civilian Service

Award for his contribution. From 1954 to 1958 Spilhaus was U.S. representative on the Executive Board of UNESCO. From 1961 to 1963 he was U.S. Commissioner in charge of the science exhibit at the Seattle World's Fair. Upon taking this appointment, Spilhaus said, "Science is not the exclusive property of the scientist. Science belongs to the people, all people, and must be understood, utilized, and guided by them. Though decision making and problem solution are the responsibilities of everyone in a free society, the scientist has a special role to play in making science meaningful to his fellow men. He cannot afford to fence off science confining its lessons to the experts." These words appear even more cogent today than they did in 1961 in view of the problems currently associated with the funding of scientific research and the misunderstanding of science and scientists one often encounters.

Spilhaus feels strongly that science should be brought close to the public. Toward this end he developed "Our New Age," a daily and Sunday illustrated feature on science. He is author or co-author of *Workbook on Meteorology, Meteoreological Instruments, Weathercraft, Satellite of the Sun, Turn to the Sea*, and *The Ocean Laboratory*. He has also published more than 100 articles in a wide variety of scientific journals.

Two recent projects in which Spilhaus has played a large role have received considerable attention. One is the "sea-grant college" system, for which authorizing legislation was passed in 1966; Spilhaus was instrumental in developing the concept. The other is the Experimental City Program [*Science* **159**, 710 (1968)]. This project has now gone through phase I of planning and is about to enter on a phase of expansion.

In 1967 Spilhaus became president of the Franklin Institute, a position he has held until very recently. From 1963 to 1967 he served on the Board of Directors of the AAAS, and at present he serves on the Board of Trustees of the following organizations: Science Service, Inc., the International Oceanographic Foundation, the Pacific Science Center Foundation, the American Museum of Archaeology, the American Museum of Electricity, St. Paul Institute, and the Aerospace Corporation. He is a member of the National Science Board and a member or fellow of numerous organizations that include the American Institute of Aeronautics and Astronautics, the Royal Society of South Africa, the Royal Meteorological Society, and the American Philosophical Society. He has received honorary doctoral degrees from Coe College, Rhode Island University, and Hahnemann Medical College.

It should be apparent that Spilhaus' term as president of the AAAS will be an interesting one for all of us.

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AAAS Council Meeting, 1968

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Under the chairmanship of President Walter Orr Roberts, the AAAS Council held its 1968 meeting in the Sam Houston Room of the Sheraton-Dallas Hotel in Dallas, Texas, on 30 December. There were 200 members present for the morning session and 151 for the afternoon session.

In his report as Chairman of the Board of Directors, Don K. Price told Council that plans were going forward for a meeting of representatives of AAAS and the British Association for the Advancement of Science to consider the activities and responsibilities of general scientific societies, such as the two sponsoring associations, that include all fields of science and that are devoted to the improvement of the public understanding of science as well as the advancement of scientific research and study. There will be 10 to 15 selected representatives from each of the associations plus approximately 10 scientists from other countries in attendance.

Dr. Price then reviewed the discussions of Council and the Board over the past 3 years concerning the use of herbicides in Vietnam, the actions the Board had taken with respect to that problem, and also its actions concerning the more general problem of large-scale, man-made alterations of the environment. The AAAS Committee on Environmental Alteration, the creation of which had been announced a year earlier, had, he reported, gotten organized and had already started on a program of analyzing selected situations in which technological developments are or may be seriously altering the natural environment.

On the specific issue of the use of herbicides in Vietnam, he reported that the Board had assumed direct responsibility and that the Committee on Environmental Alteration was not engaged in studies in this area. He reminded Council of the statement prepared by the Board and published in the 19 July 1968 issue of *Science*, and said that the Board had prepared a statement of plans for the initiation of a field study of the effects of the use of herbicides in Vietnam which it wished to report to Council.

During the following discussion, Council voted to endorse the intent and general principle of the Board's statement, but recommended some changes in wording which the Board, in a special meeting held during the noon recess of the meeting of Council, adopted. As revised in accordance with the advice of Council, the statement follows.

It is the sense of the Board that the Association, looking not only to the effects of the wartime use of herbicides, but also to the opportunities for the peacetime reconstruction of the agriculture and economy of affected areas:

(1) determines that it shall be a purpose of the Association to bring into being the most effective possible field study of the potential long-term and short-term ecological risks and benefits to the areas affected; and

(2) specifically directs the AAAS staff to convene, as soon as possible, an ad hoc