manager of the lab's earth and space sciences division.

OBITUARIES

Edward L. Brady

Edward L. Brady, who had recently retired from his position as associate director for international affairs at the National Bureau of Standards, died on 20 September 1987.

Born in Charleston, South Carolina, in 1919, Brady was educated at the University of California at Los Angeles, he where received a BA (1940) and MA (1942) in chemistry, and at the Massachusetts Institute of Technology, where he received a PhD in physical chemistry in 1948.

From 1942, when he began his professional career at the University of Chicago in one of the major laboratories of the wartime atomic bomb project, until 1963, when he went to NBS, Brady was involved with nuclear energy research. From 1943 until after World War II, he was at Clinton Laboratories in Oak Ridge, Tennessee (the forerunner of the present Oak Ridge National Laboratory), where he was a member of the group that designed and operated the first large-scale hot laboratory facilities.

In 1947 Brady, then a graduate student at MIT, published with Martin Deutsch pioneering measurements of the angular correlations of successive nuclear gamma radiations. This and a series of subsequent publications established an important technique that is still used for spectroscopy in nuclear and elementary physics.

After receiving his PhD, Brady spent ten years in various capacities at General Electric Company. While at the company's Knolls Atomic Power Laboratory, he led research groups working on coolant chemistry and on developing equipment for in-pile tests of reactor materials.

Brady served as the US Atomic Energy Commission's representative to the United Kingdom from 1956 until 1958. Later, he was the senior scientific adviser of the US mission to the International Atomic Energy Agency in Austria.

He left Vienna in 1961 to go to General Dynamics (San Diego, California), where he was responsible for various projects connected with chemical and materials problems in nuclear power plants.

In 1963 NBS, acting on a recommendation of the Federal Council for Science and Technology, established the National Standard Reference

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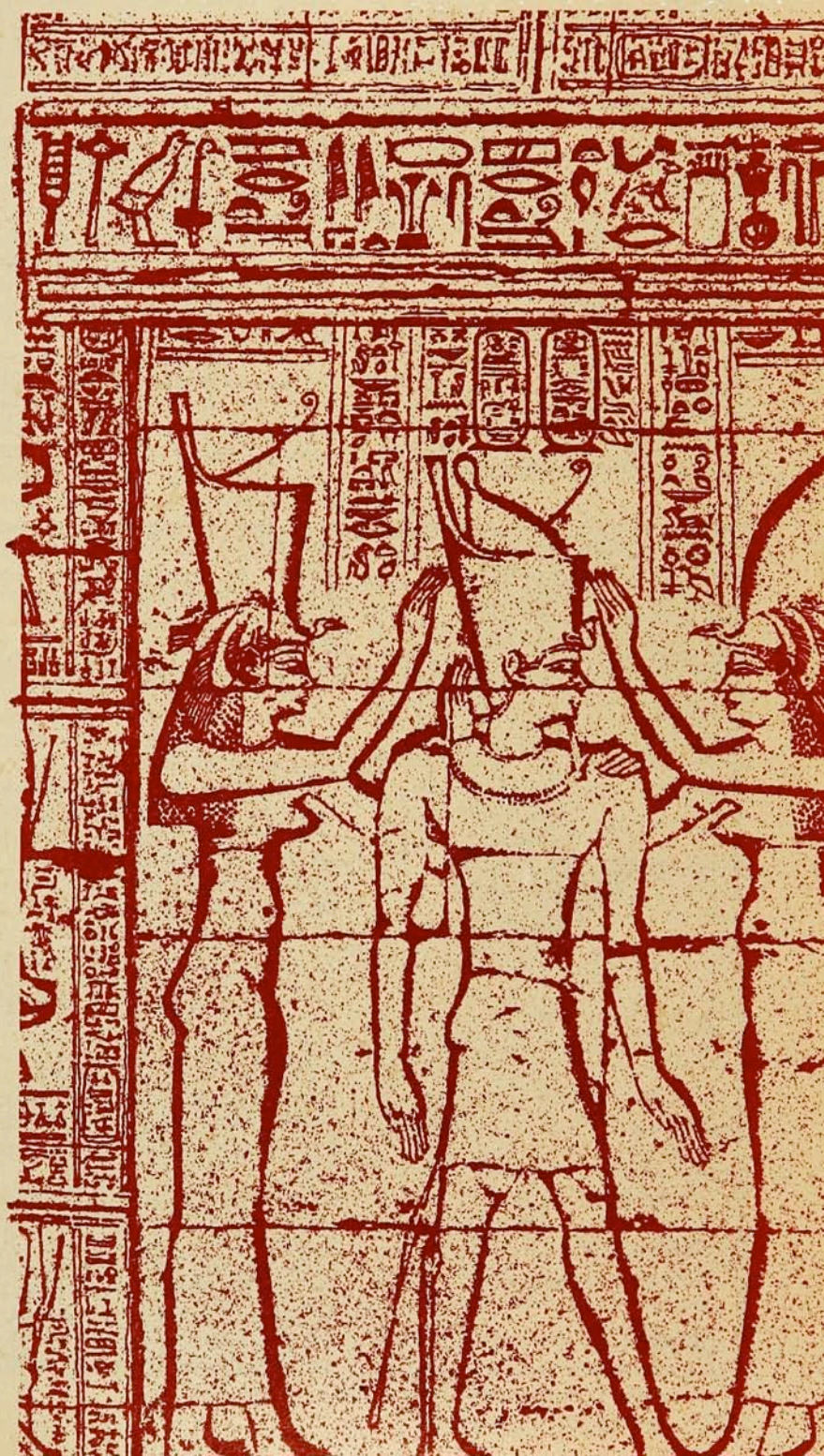

Data System to centralize much of the data compiled by government laboratories and to provide critically evaluated data on the physical and chemical properties of substances and their interactions. As a chemist who had worked in nuclear energy for many years, Brady was eminently suited to head the program.

In 1968 his responsibilities at NBS were broadened to include all of the bureau's programs in gathering, analyzing, publishing and distributing scientific and technical information. Throughout his career at NBS Brady felt it was vital to get the bureau's technical information to those who needed it. In a statement before Congress in 1971, he said: "Information is the key to wise management of our future. Perhaps the most important event of the next decade will be the recognition of the true value of information—the right information, reliable and relevant to our needs, available in a useful form to all those who need it."

In 1978 he was named NBS associate director for international affairs. With his breadth of scientific knowledge, graciousness and congenial manner, Brady established official links and made many friends in government research centers around the world. He was instrumental in drafting agreements to guide US exchanges of scientific and technical personnel with the USSR and the People's Republic of China. He negotiated technology cooperation with numerous countries, developed policy for implementing US treaties in areas of science, and established mechanisms for exchanging technical information among countries.

In addition to being a respected scientist, Brady was a born diplomat, able to bring order out of chaotic situations with quiet logic. His friends in both the scientific and the diplomatic communities were legion, and his enemies nonexistent.

ERNEST AMBLER
National Bureau of Standards
Gaithersburg, Maryland

Chen-Zhong Yang

Chen-Zhong Yang, director emeritus of the Institute of Modern Physics in Lanzhou, China, died on 28 December 1987.

Yang was born in Jiangsu Province, China, in 1913. He received his undergraduate education in China. From 1946 to 1951 Yang studied at Liverpool University, receiving a PhD in 1950. His thesis, supervised by John R. Holt, reported one of the earliest experimental studies of direct transfer reactions and inelastic scattering.

In 1951 Yang returned to China, to the newly formed Institute of Modern Physics, which was then located in Beijing. He maintained his affiliation with this institute until his death. He devoted his early years there to initiating a program in experimental nuclear physics and training the people who became pioneers in this field in China.

In 1957 Yang was given the task of moving the Institute of Modern Physics to the central Chinese city of Lanzhou. Though the ancient city of Lanzhou had been the western Chinese terminus of the Silk Road, its first rail connection with the rest of China was established only in 1956. Yang's mission was to construct a "modern" experimental physics laboratory in this frontier environment. During his 27-year tenure as director of the institute in Lanzhou (1957–84), he oversaw the construction of several major instruments, including a 400-kV Van de Graaff accelerator (1957), a 1.5-meter cyclotron (1957–61) and a modern separated-sector cyclotron (begun in 1977). Despite the withdrawal of Soviet technical assistance in 1960, light- and heavy-ion beams were obtained from the 1.5-meter cyclotron in 1969. The various heavy-ion beams from this accelerator have been the basis of Chinese heavy-ion physics. The new separated-sector cyclotron will be commissioned at the end of this year.

At the end of the Chinese Cultural Revolution Yang was instrumental in re-establishing scientific contact with the West. In 1973 he was one of the first Chinese scientists to travel to the West, attending a heavy-ion workshop at the Niels Bohr Institute. Likewise, in 1978 he was chosen to lead the first post-Cultural Revolution nuclear physics delegation to visit the US. He is remembered by many nuclear physicists for his eulogy of Mao Tse-tung at the time of Mao's death during the Caen Nuclear Physics Conference in 1976.

Chen-Zhong Yang can be characterized as a teacher in the best traditional Chinese use of this term and as a gentleman and a scholar by his Western colleagues. His work at the Institute of Modern Physics epitomizes the promise and hope for the future of modern heavy-ion physics in China.

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