

OBITUARIES

Francis L. Friedman, professor of physics and director of the Science Teaching Center at the Massachusetts Institute of Technology, died in a Boston Hospital on August 4. He was 43 years old.

Born in New York City, he studied at Harvard University, where he received his bachelor's degree in 1939 and his MA degree in the following year. After serving in 1941 as a graduate assistant at the University of Wisconsin and as an assistant physicist at the National Bureau of Standards, he joined the University of Chicago's Metallurgical Laboratory in 1942 as a group leader in theoretical physics for the wartime Manhattan District's Plutonium Project. Four years later he left Chicago to become a research associate at the Massachusetts Institute of Technology and he received his PhD there in 1949. He began teaching at MIT in the latter year and was appointed to the rank of professor in 1958. His research interests were primarily in the areas of nuclear and theoretical physics and in cosmic-ray shower theory.

In addition to his academic responsibilities, Prof. Friedman served as a consultant for the Atomic Energy Commission and participated in the State Department's Troy Project, in Project Lexington (a study of nuclear-powered flight), and in Project Hartwell (undersea warfare). Prof. Friedman played a major role in the organization and development of the Physical Science Study Committee which was established in 1956 at MIT under the leadership of Jerrold R. Zacharias. The PSSC program resulted in the creation of a new physics course for high schools, incorporating new laboratory methods and apparatus, a new textbook, more than fifty teaching films, new types of tests, more than two dozen books for supplementary reading, and new approaches to the problem of providing further training for high-school physics teachers. Much of the success of that effort has been attributed to Prof. Friedman's selfless devotion to the work of the PSSC, and he is credited with having been the leading contributor to the program in all matters of substantive content and pedagogic method.

In 1960, he was appointed director of the newly formed Science Teaching Center at MIT for the improvement of science teaching at the college level. He also took part in the development (and served as vice chairman) of the Commission on College Physics, a coordinating agency for physics education established two years ago under the auspices of the American Association of Physics Teachers. Prof. Friedman was a member of the AAPT and the American Physical Society.

Edgar P. Slack, chairman of the Physics Department at Monmouth College in Long Branch, N. J., died on August 5 at the age of 76. A native of Abington, Mass., Prof. Slack graduated from the Massachu-

setts Institute of Technology in 1908 and received an MS degree from New York University in 1937. He started his career in 1908 as an instructor in physics at MIT, worked in the Nutrition Laboratory of the Carnegie Institution from 1910 to 1912, and was with Underwriters Laboratories, Inc., from 1912 to 1926.

During the years 1914-1920, he taught at Pratt Institute and in 1924 joined the faculty of the Polytechnic Institute of Brooklyn, assuming the chairmanship of the Department of Undergraduate Physics in 1948. When he retired from Brooklyn Polytechnic in 1954, Prof. Slack became director of the Training School of the National Board of Fire Underwriters, and from 1956 until his death was the head of the Physics Department of Monmouth College.

Prof. Slack was a member of the American Association of Physics Teachers.

Shih-Tsun-Ma, senior lecturer in theoretical physics at the University of Sydney, died on January 27 at the age of 48. Born in China, he attended the National University of Peking and later studied as a graduate student in England at Queen's College, Cambridge, where he worked under P. A. M. Dirac. He obtained his doctorate from Queen's College in 1941. Dr. Ma then returned to Peking as professor of physics at the National University, where two of his students were C. N. Yang and T. D. Lee.

Dr. Ma left China in 1945 to join the Institute for Advanced Study at Princeton, and during the next several years was also associated variously with the Dublin Institute for Advanced Studies, the Institute for Nuclear Studies at the University of Chicago, and the National Research Council of Canada. He went to Australia in 1953, under an appointment to the Theoretical Physics Department at the University of Sydney.

Dr. Ma was a member of the American Physical Society and was a contributor to scientific journals of many countries. His main interests as a theorist were in the areas of quantum electrodynamics and meson field theory.

Nathan Aronovich Yavlinsky, senior associate at the Institute of Atomic Energy in Moscow and a leading Soviet physicist, died on July 28 at the age of 50.

A native of Kanev, Kiev Oblast, USSR, Dr. Yavlinsky studied at the Kharkov Electrotechnical Institute and later worked at the Correspondence Power Engineering Institute, performing high temperature research. In 1948, he joined the Institute of Atomic Energy where he remained until his death.

Dr. Yavlinsky was a member of a twelve-man team that in 1958 received Lenin Prizes for research in thermonuclear processes. He was also a recipient in 1949 of the Stalin Prize.