he described in his Nobel lecture, that the source of ionization lay "in a hitherto unknown radiation of extraordinarily high penetrating power which entered the earth's atmosphere from space and was still able to produce noticeable ionization in the air at the surface of the earth". After World War I, he continued his research in this area and, in 1931, established a small observatory on the Hafelekar mountain near Innsbruck, Austria, in order to record fluctuations in the intensity of cosmic radiation.

Dr. Hess was born in Waldstein, Austria, and was educated at the Universities of Graz and Vienna. He received his PhD from Graz in 1906 and spent the following year as an assistant in the Department of Mineralogy at the University of Vienna. In 1908, he became a lecturer in medical physics at the Vienna Veterinary Academy and, in 1910, assumed two additional posts as an assistant in the Vienna Institute for Radium Research and as associate privatdozent of physics at the University of Vienna. Ten years later, he resigned from all three positions to become associate professor of experimental physics at the University of Graz.

In 1921, while on leave of absence, he spent two years in the United States. He served as chief physicist for the US Radium Corporation, where he established and directed the Corporation's research laboratory. He returned to Graz in 1923 and was named professor two years later. In 1931, he joined the faculty of the University of Innsbruck with the same title and the additional position of director of the University's Institute for Radium Research. Six years later, he returned to Graz once more for a brief period as head of the Physics Department and director of the Physical Institute, but left in 1938 to come to the United States permanently. He joined the physics faculty of Fordham University where he remained as a professor until his retirement in 1956. He continued to work in the University's laboratories until a year before his death.

Dr. Hess was a fellow of the American Physical Society and a member of the American Geophysical Union and the Austrian Academy. Two years ago he received an appointment to the Pontifical Academy of Sciences in Rome. Prior to receiving the Nobel Prize, Dr. Hess was awarded the Vienna Academy of Science's Lieben Prize in 1919. In 1932, he received the Carl Zeiss Foundation's Ernst Abbe Prize for physics.

Raymond A. Heising

Raymond A. Heising, a pioneer in radio communication technology and for many years a member of the staff of Bell Telephone Laboratories, died on January 16 at his home in Summit, N. J. He was 76.

Mr. Heising was born in Albert Lea, Minn., and studied at the University of North Dakota, where he received a bachelor's degree in electrical engineering in 1912 and a master's degree two years later. He joined the Western Electric Company in 1914 as a radio research engineer and continued as a staff member of Bell Telephone Laboratories when the Laboratories were incorporated in 1925. He retired from Bell Laboratories in 1953 and became an independent consulting engineer.

Mr. Heising's research interests included radio communications, vacuum-tube circuits, radio-wave propagation, and oscillators. He was involved in the construction of the early radio-telephone transmitters and was instrumental in the development of transatlantic radio-telephone communications, ship-to-shore communications, and communications between airplanes in flight and ground operators. He was a fellow of the American Physical Society and a past president and treasurer of the Institute of Radio Engineers. He received the IRE's Morris Liebmann Memorial Prize in 1921 and the IRE Founder's Medal in 1957.

H. Horton Sheldon

H. Horton Sheldon, professor of physics and former acting dean of faculties and vice president of Roosevelt University in Chicago, died on December 23 at the age of 73.

Dr. Sheldon was a well-known specialist in electronics, where his principal interests lay in conduction of electricity through crystals and photoelectric color measurement. He had been instrumental in developing an electronic colorscope for color matching of textiles and served, in industrial circles, as a consultant in neon tube design. His research also included work on the absorption of gases by charcoal, ultrahigh radio frequencies, sound recording, and x rays.

He was born in Brockville, Ontario, and was graduated from Queen's College in Kingston, Ontario, where he also received a master's degree in 1917. He spent the next two years at the University of Chicago as a research associate and received a PhD in physics there in 1920. He next served as an instructor in physics at the University of Michigan and, in 1922, joined the faculty of New York University. He remained there for nearly 20 years progressing from assistant professor to professor. He served as chairman of the Physics Department in the University's Washington Square College from 1925 to 1927 and as director of the science education program in the University's Division of General Education from 1936 to 1941. During this period, he also spent three years as science editor of the New York Herald Tribune.

During World War II, he served as a consulting and research engineer to several firms, and, after the war, joined the faculty of the University of Miami as a research professor of engineering. He remained at Miami until 1953 during which time he also served, for two years, as dean of the University's Division of Research and Engineering. From 1953 to 1956, he worked with several industrial concerns and also served as a consultant to the Organization for European Economic Cooperation and to the Office of Saline Water in the US Department of the Interior. In 1956, he joined the Roosevelt faculty as a visiting professor of physics and was named professor a year later. He had been a trustee of the University since 1960.

Dr. Sheldon was a member of the American Physical Society and a fellow of the Acoustical Society of America.