

the Jesse W. Beams Award for research.

Pinkston, a member of the Annapolis faculty since 1942, was cited as an "innovative classroom and laboratory instructor" whose "ingenious and carefully prepared demonstrations have excited and instructed two generations of students." He earned his master's degree in physics from Catholic University in 1954 and during 1958-67 was chairman of the Annapolis physics department.

Carr received his PhD in physics from the University of Virginia in 1941, joined Auburn University as associate professor of physics in 1948 and has been head of the department since 1953. The southeastern section recognized him as "developer and designer of outstanding undergraduate and graduate programs . . ."

Gordy earned his doctorate in 1935 from the University of North Carolina. He has investigated hydrogen bonding and molecular structure through in-

frared studies and has also worked on microwave radar and spectroscopy. He joined Duke University in 1946.

Astronomers name Herbig 1975 Russell Lecturer

George H. Herbig of the Lick Observatory has been named 1975 Henry Norris Russell Lecturer by the American Astronomical Society. The society presents the award annually in recognition of outstanding astronomical research. Herbig will deliver his lecture in December during the society's 75th anniversary meeting to be held in Chicago.

He earned his doctorate in 1948 from the University of California at Los Angeles. His speciality is stellar and interstellar spectroscopy. He has been with the Lick Observatory, at the University of California, Santa Cruz, since 1944 and is also a professor of astronomy and astrophysics.

Arthur P. Stern has been elected president of the Institute of Electrical and Electronics Engineers and Joseph K. Dillard has been elected executive vice president. Stern is vice president of the Magnavox Company and general manager of its advanced products division; Dillard is manager, advanced systems technology, at the Westinghouse Electric Corporation in East Pittsburgh, Pennsylvania.

Joining the Michigan State University physics department as assistant professors are Lawrence Litt, formerly with Brookhaven National Laboratory, James Whitmore, Fermi National Accelerator Laboratory, John Matthews, Stanford Linear Accelerator Center and Dan-Olof Riska, State University of New York at Stony Brook.

Korukonda L. Murty has been named senior research engineer at the Lynchburg research center, Babcock and Wilcox

obituaries

William David Coolidge

William David Coolidge died peacefully at home during the night of 3 February, several months after his 101st birthday on 23 October. Over sixty years ago his work on ductile tungsten and his invention of the x-ray tube that bears his name made him a great benefactor of mankind.

He was descended (as was our thirtieth president) from John and Mary Coolidge, who reached Massachusetts in 1630. In Coolidge, the sterner Puritan virtues were tempered by unflinching politeness, kindness, and consideration for others. Physical endurance and great energy gave the lie to his seeming frailty.

Nothing in Coolidge's ancestry or in his rural boyhood suggested his future. But, just after graduating from MIT as electrical engineer in 1896, he built at home good-sized equipment for experiments with x rays, then newly discovered. Thereafter, he earned a PhD (*summa cum laude*) in physics from Leipzig and returned to MIT in 1899 to become a physical chemist under the influence of Arthur A. Noyes and Willis R. Whitney. In 1905 he joined the General Electric research laboratory, which Whitney had founded five years before. Coolidge took charge of that laboratory in 1932, and retired from it as director of research and vice-president of the company at the end of 1944.

Applied research offers no more fascinating story than that of ductile tungsten. Coolidge became a sophisticated



Pioneer of the electronics era, William Coolidge, at ages 98 and 69. The photo on the right, taken in 1943 when Coolidge was General Electric's vice-president and director of research, shows him examining a one-million volt x-ray tube. His first x-ray patent was issued in 1917.

experimental metallurgist, inventing radically new techniques and founding industrial powder metallurgy in his efforts to render tungsten useful. The wire he made revolutionized the lamp industry, which uses his methods today. With the availability of ductile tungsten and its satellite, molybdenum, Irving Langmuir, Albert W. Hull and others could launch the electron-tube era. By studying lamp-filament wire, Langmuir discovered the thoriated-tungsten elec-



tron emitter and enabled Coolidge to invent his highly successful x-ray tube. Ductile tungsten, vital in itself, thus triggered a series of events that assured the success of the fledgling research laboratory and brought American industrial research to the world's attention.

Coolidge's later research, which centered on high-voltage x-ray and electron-beam sources, his success as director, his contributions to the government during both World Wars, his connection