



SERIES

better understanding of the interaction of radiation with atoms, especially for his contributions to the development of the method of quantum beat spectroscopy."

Series obtained his PhD from Oxford University in physics, remaining there until 1970, when he became a professor of physics at the University of Reading. His early research involved the optical confirmation and measurement of the Lamb shift in atomic hydrogen and singly ionized helium. His lifelong interest in hydrogenic spectra lead him to determine the Rydberg constant through careful analyses of the Stark effect and to employ optical pumping, level crossing, and quantum beats, to make accurate determinations of fine- and hyperfine-structure lifetimes and other basic atomic properties.



BURRUS

Steacie Prize given to Gordon Drake

Gordon W. F. Drake, professor of physics at the University of Windsor, has been chosen to receive the Steacie Prize in natural sciences. The prize is given annually to recognize achievements by a person under 40 working in Canada in the natural sciences, and includes a cash award of \$5000.

The trustees of the E. W. R. Steacie Memorial Fund cited his "significant contributions to the theory and determination of relativistic effects in radia-

tive transitions, to the understanding of the Lamb shift and quantum beats in hydrogen, and to the development of variational methods for the relativistic Dirac equation."

Gordon graduated from McGill University with an honors chemistry degree in 1964, and obtained a Master's in physics from the University of Western Ontario in 1965 and a PhD in physics from York University in Toronto in 1967. He held the National Academy

of Sciences Fellowship at Harvard College Observatory and Smithsonian Astrophysical Observatory from 1967 to 1969. He joined the faculty of the Department of Physics at the University of Windsor in 1969.

Drake's principal interests are in the field of atomic physics, where the topics he has worked on concern aspects of interactions within or between atoms or interactions between free atoms and the radiation field.

Gaylord P. Harnwell

Gaylord P. Harnwell, president emeritus of the University of Pennsylvania and former chairman of its physics department, died on 17 April 1982. Harnwell was born in Evanston, Illinois, on 19 September 1903 and graduated from Haverford College in 1924. After spending a year working with Ernest Rutherford at the Cavendish Laboratory in Cambridge, he returned to begin graduate work at Princeton University, where he received his PhD in 1927 and later became an instructor. While at Princeton, his research in gaseous electronics led to the development of a series of instruments that ultimately resulted in his becoming editor of the *Review of Scientific Instruments*.

In 1938 Harnwell became chairman of the physics department at the University of Pennsylvania, where he quickly demonstrated unusual ability as an administrator. He developed the physical resources of the department and brought together the support for

the construction of a new physics laboratory, the present David Rittenhouse Laboratory. More important, he recruited a long line of distinguished physicists who provided the nucleus from which the present department evolved.

During the Second World War Harnwell was director of the University of California Division of War Research at the United States Navy Radio and Sound Laboratory in San Diego. After the war, Harnwell returned to the University of Pennsylvania to continue as chairman of the physics department until 1953.

Harnwell's effective work as an administrator did not hamper his career as a scientist and teacher. His published texts include *Principles of Electricity and Magnetism*, *Experimental Atomic Physics* (with J. G. Livingood), *Atomic Physics* (with W. E. Stephens), and *Matter, Energy, and the Universe* (with G. T. E. Legge), all of which were widely used. He became consulting editor of the International Series in Physics of the McGraw-Hill Book Co. He was editorial director of PHYSICS

TODAY from 1951-53 and chairman of its editorial board until 1955.

Harnwell became president of the University of Pennsylvania in 1953. He was good at delegating responsibility, yet never delegated the power of ultimate decision. When things were

HARNWELL



obituaries