SINCLAIR SMITH

By J. A. Anderson

The death of Sinclair Smith on May 18, 1938, at the early age of thirty-nine years, terminated a scientific career which had already produced important results and was rich in promise for the future.

Smith was born in Chicago, March 24, 1899. In 1906 his parents took him to Italy for two years, then to Indiana, where they lived until 1913, when they moved to California.

During his boyhood he showed great interest and ability in mechanical drawing and design. Some time was spent as a draftsman at the Mount Wilson Observatory during the designing and construction of the 100-inch telescope. Another summer vacation period was spent with a commercial engineering firm in Los Angeles. The foundation for his later thorough knowledge of engineering and his skill in the design and construction of scientific apparatus was undoubtedly laid in this period.

He received his Bachelor's degree from the California Institute of Technology in 1921 and the Ph.D. degree from the same institution in 1924. The following year was spent at the Cavendish Laboratory, Cambridge, England. Returning in 1925, he became a regular member of the staff at the Mount Wilson Observatory, where he had served as laboratory assistant while studying at the California Institute of Technology. He took up at once a thorough investigation of energy-measuring instruments, particularly the radiometer. From this investigation we now know that just as the resolving power of a microscope is limited by the finite length of the light waves, so the sensitivity of energy-measuring instruments is limited by the natural fluctuations in weak beams of radiation, small electric currents, etc., one of the many results of the circumstance that energy occurs in definite units or quanta. He showed experimentally, however, that even when the measuring instrument becomes unsteady as a consequence of these fluctuations, useful measurements can be made by photographic registration extended

DR. SINCLAIR SMITH. 1899-'38

over a period which is long compared to the average period of a fluctuation.

About six years ago he designed and built one of the first spectrographs using in its optical parts the principle of the Schmidt telescope. It had an aperture of 2 inches and worked at F/1. Furnished with quartz prisms and correcting plate, this instrument covered the entire ultraviolet portion of the spectrum to the limit of atmospheric transmission. It was used in a study of the apparent velocities of many members of the Virgo cluster, as well as in a detailed study of the spectrum of the companion to the Andromeda Nebula. The results were embodied in two important though brief papers, in the first of which he deduced that the value of the mass of an average extragalactic nebula is of the order of 2×10^{11} suns, and in the second he derived a value of the stellar density at the center of the companion to the Andromeda Nebula.

Dr. Smith took a keen interest in everything connected with the design, construction, and control of the 200-inch telescope. During the detailed designing of the mounting, his sound engineering knowledge and his considerable experience in observing with the Mount Wilson telescopes combined to make him a most useful member of the engineering group charged with the execution of this work. His last year was devoted to the problem of designing the best possible system of control of the telescope, a task which was about three-quarters completed when he died.

Personally he was always quiet and unassuming, but cheerful and optimistic in the company of those whom he knew well.

CARNEGIE INSTITUTION OF WASHINGTON
MOUNT WILSON OBSERVATORY
June 1938