OBITUARY

E. P. BURRELL

THE world of engineering and of science, particularly astronomy, has suffered a great loss in the untimely death of Mr. E. P. Burrell, director of engineering of the Warner and Swasey Company of Cleveland, makers of machine tools, but especially famous as builders of many of the world's great telescopes. Mr. Burrell was trained at Cornell in engineering, and while his work with the company was primarily as a designer and director of construction in its well-known line of turret lathes and other machine tools, it is chiefly in connection with his later work in the design and construction of modern reflecting telescopes that this note of appreciation of his many fine qualities of mind and heart attempts to deal.

Mr. Burrell's first essay in the design of large telescopes occurred in 1913 when the Warner and Swasey Company was awarded the contract by the Canadian Government for the mounting of a 72-inch reflecting telescope to be erected at Victoria, B. C. The details of the design were beautifully worked out by Mr. Burrell, who showed no less than genius in developing the mechanism required for the operation of the telescope in the most suitable and efficient, and at the same time, in the simplest possible form. It was the first telescope in which the polar and declination axes were wholly carried by self-aligning ball bearings and in which the motions were electrically operated and controlled. The completed telescope, in simplicity and beauty of design, in accuracy of construction and in speed and convenience of operation, as yet unsurpassed by any working telescope, and which has been in successful and fruitful use for nearly twenty years, forms a great tribute to Mr. Burrell's engineering ability and skill in design.

This was followed shortly afterward by the 69-inch Ohio Wesleyan telescope similar in form, but with improvements in detail. But the masterpiece of the Warner and Swasey Company and of its designer, Mr. Burrell, is undoubtedly the 82-inch reflecting telescope of the McDonald Observatory, Texas, now approaching completion. The specifications were exacting, requiring the utmost ingenuity and perseverance to fulfil. Some of the original features worked out by Mr. Burrell include a greatly shortened declination axis, permitting the Coudé beam to be reflected down the polar axis; duplicate elevating platforms, enabling the Cassegrain focus to be readily reached in any observing position, also serving for resilvering and changing accessories; a simple and convenient method for changing the secondary mirrors, and a special vacuum tube type of electric drive. This mounting, now installed in its dome, sets a new standard in accuracy and convenience of operation.

No man can have a finer monument than these great telescopes for which Mr. Burrell was mainly responsible, nor can any man have a more enduring memorial than that provided by the work they are doing and will continue to do in adding to our knowledge of the universe. These speak in no uncertain tones of Mr. Burrell's outstanding scientific and engineering ability, but they fail to reflect another aspect of his character, his kindly and lovable personality. His many friends will sincerely mourn his passing and will cherish dearly the memory of his charity, patience and other lovable qualities of mind and heart, even more than his great intellectual attainments.

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RECENT DEATHS

DR. AMBROSE SWASEY, of the firm of Warner and Swasey, of Cleveland, manufacturers of telescopes and instruments of precision, died on June 15. He was ninety years old.

DR. W. T. MATHER, professor of physics at the University of Texas, died suddenly on June 14 at the age of seventy-two years. He had been a member of the faculty for forty years.

DR. HARRISON PRESCOTT EDDY, sanitary engineer of Boston, died suddenly on June 15 at the age of sixty-seven years.

DR. HANSFORD M. MACCURDY, professor of biology at Alma College, died on June 21. He was in his seventieth year.

JOHN M. CONDRIN, associate professor in the department of biology of the University of Toledo, died on June 9 at the age of thirty-two years. A correspondent writes: "He had been a member of the department since 1927. He was a graduate of Western Reserve University and received the M.A. degree from that institution in 1927 and was just completing work for his doctorate at the University of Michigan. He was a member of several national zoological societies and of both the Ohio and Michigan Academies of Science. He was the author of several publications on nudibranchs, genetics of pigments in mollusks and the physiology of hibernation in mammals."