ship. The name of each fellow is specially designated by an asterisk in the quadrennial directory of members, which makes up the larger part of each volume of Summarized Proceedings.

BURTON E. LIVINGSTON,
Permanent Secretary

WILLIAM JOSEPH HUSSEY

WILLIAM JOSEPH HUSSEY, fifth director of the astronomical observatory of the University of Michigan and professor of astronomy, died in London on the twenty-eighth day of October, 1926. Three weeks before, he had set out from Ann Arbor for Bloemfontein, South Africa, on a project that marked the culmination of years of planning and effort—a project involving the erection of an observatory and the installation of the twenty-seven-inch Lamont refractor primarily for the prosecution of a double star survey of the southern skies. While waiting to continue his journey from London death, caused by heart failure, came instantly as he and Mrs. Hussey conversed with friends at the dinner table.

Born in Ohio, August 10, 1862, on a farm where funds were limited, an education was not gained without a struggle. Teaching and other work needed to eke out available resources interfered with progress in study to such an extent that it was not until 1889 that Professor Hussey received his bachelor's degree. He graduated in civil engineering from the University of Michigan, with a brilliant record. For a time in 1889 he was an assistant in the Nautical Almanac Office at Washington, D. C.

Then began a period of seven years devoted principally to teaching. Instructor for three years at Michigan in mathematics and astronomy and acting director of the Detroit Observatory during the last one of these years, he was called to Leland Stanford Junior University as assistant professor of astronomy in 1892 and rose in three years' time to a full professorship in that subject. During this period he visited the Lick Observatory frequently as a volunteer observer. It was during this time that his remarkable photographs and studies of the physical characteristics of Comet Rordame were made. His appointment as successor to Barnard at Lick Observatory came in 1895.

The years as astronomer at Lick Observatory, from 1896 to 1905, formed for Professor Hussey a period of most intense activity in research. Space is lacking to consider the details of his researches there. His photographs, orbits and micrometer observations of comets, his drawings of the planets, his micrometrical observation of satellites and asteroids, but most of all his epoch-making discoveries, measures and other investigations of double stars brought him international distinction and the widest recognition.

Professor Hussey's most notable achievements at Lick Observatory were his observations of the double stars discovered at Pulkowa and his discovery and observation of 1,338 new double stars. The report of the former studies fills Volume V of the Lick Observatory Publications, a model of its kind. The discoveries of double stars resulted from a survey begun independently in 1899 by Dr. R. G. Aitken and Professor Hussey but pursued jointly by them almost from the first and completed by Dr. Aitken working alone after 1905. This great work with related investigations won for both collaborators the Lalande Gold Medal of the French Academy in 1906. Subsequently, at La Plata, Professor Hussey, observing in the southern skies, increased the total of his double star discoveries to 1,650.

Dr. Hussey returned to Michigan as professor of astronomy and director of the observatory in October, 1905. Though always assuming his full share of teaching, in which he was notably successful, and finding time for countless other tasks, he nevertheless kept before him always the larger problems connected with the growth and extension of the observatory. The initial program of construction for Ann Arbor, beginning with the buildings, instrument shop and smaller instruments, culminated in the 37½-inch reflector. When this instrument was completed with its spectrographic equipment and auxiliaries in 1911, the original plans for reorganization and construction at Ann Arbor were essentially realized, and a period of research began.

At this juncture there came an opportunity for similar offices at a great southern institution. The observatory at La Plata, in Argentina, had expended considerable sums of money but then lay dormant with a group of sightly buildings and a complement of equipment needing only the attention of experts to make it productive. A cooperative arrangement was formulated under which Professor Hussey was to add the duties of the professorship and directorship in astronomy and geodesy at the National University of Argentina in La Plata to those at the University of Michigan, dividing his time about equally between the two institutions. When this was quickly approved by the regents of the University of Michigan, the incident was a source of much gratification to many interested in the betterment of Pan-American relations and to those interested in scientific progress.

Arrived in Argentina, July 19, 1911, it was found that the attitude of the University of La Plata was cordial and entirely favorable. However, unexpected difficulties in securing full authority at the observatory were disheartening for a time. But soon with

characteristic vigor the work of reorganization was under way. When Professor Hussey sailed for the north on January 8, 1912, new contacts were firmly established, far-reaching plans were well matured, and a list of nearly one hundred double stars discovered with the La Plata refractor carried deep significance in connection with plans for a double star survey of the southern sky.

The cooperative arrangement with La Plata University continued for six years. Professor Hussey's return to Argentina in the summer of 1912 for a stay of eighteen months began a period of rapid progress at La Plata. Delavan, Dawson and Crump joined the staff, the former members of which were stirred with new vigor. H. J. Colliau, of the Detroit Observatory, superintended the erection and equipment of an instrument shop and put the Gautier Meridian Circle, the 433-millimeter refractor, the astrographic telescope and the comet seeker into full working order. Regular observations with refractor, meridian circle and other instruments, begun at this time on a large scale, continue to-day through the able efforts of Dawson, Manganiello, Martinez and others. The eighth of a series of La Plata volumes, a series begun by Professor Hussey in 1914 and containing the results of work much of which was directly organized and inspired by him, is now on our shelves and the end is surely not yet.

It was in 1908 that Mr. R. P. Lamont, of Chicago, a friend since college days, was ready to finance the plan that Professor Hussey and he had kept in mind for a number of years. Designs and detailed drawings for a telescope mounting began at Ann Arbor in 1910. The contract for a 24-inch lens was placed with the Alvan Clark & Sons Corporation in 1911. Glass-makers in France famous for their successful production of great telescope discs failed repeatedly in their attempts to produce 24-inch blanks, and when a German firm succeeded in making them war conditions prevented delivery. At last in 1922, it was learned that discs of glass exceeding twenty-seven inches in diameter were in the making at Jena subject to order. No time was lost in applying for them and as little extra work on the mounting was entailed through the increase in contemplated diameter there was at last in the face of heartbreaking delays a real consolation in the prospect of an instrument of signally increased power.

McDowell's work in figuring the 27-inch lens began early in 1923. In October he reported completion approaching. A month later came the wire announcing his tragic death. Professor Hussey learned of this in Africa, where he was seeking a site for the new telescope. A year later still the lens in Hageman's skilful hands tested without a flaw. On January 27, 1925, the 27-inch lens arrived in Ann Arbor to prove itself on the stars in its finished mounting. Yet more delay followed through difficulties encountered in securing a satisfactory contract for the 56-foot dome needed for the successful operation of the telescope. This was arranged just before the expedition sailed.

Three weeks later the plans so fully perfected by Professor Hussey fell into other hands. Almost as soon the University of Michigan and Mr. Lamont had united in the determination that they should be carried out. Dr. R. A. Rossiter, waiting in London, was authorized to proceed to Bloemfontein to erect the building and receive the telescope already far on its journey to Africa. With other features of the program provided for, it is expected that scientific results may be secured that will serve fittingly as one of the many memorials that Professor Hussey has left behind him.

Concurrently with the progress of the southern expedition, projects for increased facilities in astronomy at Ann Arbor were under way. Professor Hussey had practically realized present plans for the equipment of the astronomical laboratories on the upper floor of the new building for the college of literature, science and the arts. For some years Professor Hussey had been formulating plans for a new research observatory for the University of Michigan with confident expectation that they would be realized. The present site for whose protection Professor Hussey worked so earnestly becoming untenable by encroachment of railroad, power house and other close buildings, he joined in the selection of a suitable observatory site well removed from disturbing conditions. He planned for this site greatly improved instrumental equipment and counted also on the construction of a research office building and laboratory on the campus at Ann Arbor.

Honors began coming to Professor Hussey early in his career. He was elected president of the Astronomical Society of the Pacific for the term of 1896–1897. In 1903, he was made a foreign associate of the Royal Astronomical Society of London. The following year he was made an honorary member of the Mexican Astronomical Society. In 1906 he received the Lalande Prize of the French Academy for discoveries and investigations of double stars. He was secretaary of the American Astronomical Society from 1908 to 1912 and during that time compiled the initial volume of the publications of that society and edited part of the second volume. He also served two terms on the council of this society. He received the honorary degree of Sc.D. from Brown University in 1912 and served as president of the Research Club of the University of Michigan for the term 1919–1920.

His publications began to appear early. "Loga-

rithms and other Mathematical Tables" and "Mathematical Theories of Planetary Motions" (a translation by Harrington and Hussey) together with several technical papers appeared during his residence at Michigan and Stanford Universities. While at Lick Observatory his "Micrometrical Observations of Double Stars discovered at Pulkowa" appeared as Volume V of the Lick Observatory Publications, and in addition he contributed about 130 technical articles to various astronomical periodicals during that time. Subsequently, the total of his technical articles had increased to more than one hundred and seventy.

Professor Hussey's only respite from hard work was found in travel and his journeys were always of an expeditionary character. In 1903 his search for observatory sites in behalf of the Carnegie Institution took him to Arizona, Southern California and Australia. At this time he reported favorably on the present site of Mount Wilson Observatory. In 1905 he headed the very successful Lick Observatory Expedition to Egypt. In 1911 his four journeys to La Plata began. In 1912 he conducted an eclipse expedition to Brazil, but clouds prevented observation. In 1923 he extended his search for observatory sites to Africa. In 1925 at Geneva, New York, he sat in the basket of a balloon ready to ascend under perilous conditions to observe the eclipsed sun from an elevation above the clouds. Expert balloonists forbade the flight. He was embarking on the major expedition of his career when death came.

The University of Michigan has lost a prominent scientist, educator and administrator. Astronomy has lost one of its distinguished contributors, organizers and builders. Those of us who were close to Professor Hussey mourn the loss of a generous and loyal friend.

R. H. CURTISS

ANN ARBOR, MICHIGAN

SCIENTIFIC EVENTS

AWARD OF PRIZES BY THE FRENCH ACADEMY OF SCIENCES

THE following prizes have been awarded by the French Academy of Sciences for the year 1926:

The Poncelet Prize (2,000 fr.), Paul Montel, professor of mathematics at the University of Paris.

The Francoeur Prize (1,000 fr.), Gaston Julia, professor of mathematics at the University of Paris.

The Montyon Prize (1,500 fr.), Professor Kyrille Popoff, of the University of Sofia.

The Henri de Parville Prize (1,500 fr.), Colonel Antoine Alayrac, chief engineer of the Bureau of Aeronautics.

The Henry Bazin Prize (5,000 fr.), Leo Escande and Marcel Ricaud, lecturers in electromechanics at the University of Toulouse.

The Montyon Prize for Pathological Industries (2,500 fr.), Ernest Portier, inspector of education for the Seine district, and (1,500 fr.) Louis Chelle, professor of chemistry at the University of Bordeaux.

The Jecker Prize (6,000 fr.), André Wahl, professor of industrial chemistry at the University of Paris, and (4,000 fr.) Gustave Vavon, professor of organic chemistry at the University of Nancy.

The La Caze Prize (10,000 fr.), André Job, professor of chemistry at the University of Paris.

The Cahours Foundation Prize, Raymond Delaby, of the School of Pharmacy, and Michel Samsoen, engineer.

The Hirn Foundation Prize (2,500 fr.), M. Thoret, of the air force.

The Becquerel Foundation Prize (3,000 fr.), Georges Bruhat, professor of physics at the University of Lille.

The Houzeau Prize (700 fr.), Louis Hackspill, professor of mineralogical chemistry at the University of Strasbourg.

The Berthelot Medal, Ernest Portier, winner of the Montyon Prize and André Job, winner of the La Caze Prize.

The Serres Prize (7,500 fr.), Charles Pérez, professor of zoology at the University of Paris.

The Vaillant Prize (4,000 fr.), Mme. Lucie Randoin, director of the laboratory of research in nutrition at the Institute of Agronomical Research.

The Jean Reynaud Prize (10,000 fr.), to the late Alfred Giard, member of the Academy of Sciences.

The Saintour Prize (3,000 fr.), Pierre Fauvel, professor of zoology at the University of Angers.

The Longchampt Prize (4,000 fr.), Charles Dhéré, professor of physiology at the University of Freiburg.

The Wilde Prize (2,000 fr.), Professor Armand Renier, of the University of Liège, and (2,000 fr.) M. Bruneau, explorer.

The Caméré Prize (4,000 fr.), Raoul Féret, director of the laboratory for research in the construction of bridges and roads.

The Gaston Roux Prize (1,000 fr.), M. Chevey, assistant at the museum of Natural History.

The Thorlet Prize (1,600 fr.), Adolphe Richard, former assistant at the School of Mines.

The Albert 1st of Monaco Prize (100,000 fr.), Jean Charcot, the explorer.

The Tremont Foundation Prize (1,000 fr.), Edmond Marcotte, advisory engineer at the mines of Laluque.

PRESENTATION OF THE ROYAL SOCIETY'S MEDALS TO SIR FREDERICK G. HOPKINS AND DR. D. H. SCOTT

IN presenting the Copley medal to Sir Frederick Gowland Hopkins, and the Darwin medal to Dukinfield Henry Scott at the anniversary meeting of the Royal Society the following citations were made:

For twenty years Sir Frederick Hopkins has been a foremost leader in biochemistry, a branch of science that