

On 1910 May 8 (local time May 9), Mr. Brooks assisted the party under the leadership of Mr. F. K. McClean at the total eclipse of the sun at Port Davey, Tasmania. At this expedition the instruments used for determination of latitude, azimuth, time, and longitude were under his control, and comprised a sidereal chronometer by Kullberg, a 6-inch Troughton & Simms transit theodolite. Magnetic observations were also made. It rained continuously during the eclipse and no photographs could be obtained.

On 1911 April 29, he was a member of a party organised by Dr. W. J. S. Lockyer to observe the total eclipse of the sun at Vavau, Tonga Islands. He made the necessary observations for time, azimuth, latitude, and longitude, using a 5-inch Cooke transit theodolite for preliminary work, a portable transit theodolite by Troughton & Simms, a Fauth chronograph, and three Kullberg sidereal chronometers. He was also in charge of the 4-inch Cooke coronagraph.

On 1877 December 20, he married the eldest daughter of the late Captain Kendall, whose father, the Rev. Thomas Kendall, was a pioneer Wesleyan minister. He leaves a widow, son, and two daughters.

He was elected a Fellow of the Society on 1891 January 9.

WILLIAM WALTER BRYANT was born 1865 December 9 at Fort-hampton, near Tewkesbury, where his father was a schoolmaster. He was educated at St. George's School, whence he passed by scholarship to Pembroke College, Cambridge, where he graduated as twenty-first wrangler in 1887, a place which those qualified to judge believed to have been below his merits.

After a short period in the scholastic profession he was appointed in 1892 February as Second Class Assistant at Greenwich Observatory after competitive Civil Service examination.

Meridian observations with the Transit Circle were his first charge, and he took up the work with enthusiasm. His zeal and energy were such, that by force of example they were infused into his fellow-observers with such effect that the output of observations was doubled, and this without degradation in quality. He long held the record with over 200 observations, in both co-ordinates, single-handed in one night. It is a gratifying memorial to this earnest worker that the output is still maintained at this high standard.

He gave much attention to the fundamental errors of the instrument, especially the "Personal Equation" of the observer. He showed its variable character depending on the physical condition of the observer, and also its bearing on the obscure correction for " $R - D$," and suggested that this might be a contributory cause to the sudden change in the Greenwich declinations at the zenith.

From 1897 onwards he took part in the observations of double stars with the 28-inch refractor. Here, as with the Transit Circle, he proved a most skilful and trustworthy observer, especially with the more difficult objects.

In 1904 he was appointed Senior Assistant and given the superintendence of the Magnetic and Meteorological Department. The work of this branch is largely of a routine character, and it might seem difficult

to find much of an absorbing nature in the study of columns of figures. Nevertheless, Bryant became greatly interested in "averages" and "records." His wonderfully retentive memory enabled him to state off-hand any outstanding data in the Greenwich records as to rainfall, sunshine, temperature, and so forth. He joined the Royal Meteorological Society in 1906, in which he held in turn the office of Secretary (1916-1920) and Vice-President (1920-1921).

In addition to various contributions to the *Monthly Notices* of the R.A.S. and to the *Quarterly Journal* of the Roy. Met. Soc., his writings include a History of Astronomy and biographical studies of Galileo and Kepler. He also did a considerable amount of work in connection with the International Catalogue of Scientific Literature, being referee for the Astronomical Section.

His recreations were music, chess, and hockey. He was a skilful player on the pianoforte, a useful singer in various choirs, a clever chess player, and a keen sportsman on the hockey field, where he continued to play well on into middle life.

Owing to the use of considerable quantities of iron in the construction of the new buildings of the Royal Observatory, it became necessary to move the magnetic instruments to a site in the park some little distance from the observatory. The imminent electrification of the local railways has now rendered it necessary to move the magnetic observatory still further afield, and it was whilst engaged on a magnetic survey of a proposed site that illness seized him and, after a serious operation, terminated fatally on 1923 January 31.

He leaves a widow and eight surviving children—his second son was killed in Gallipoli, a blow he bore with Christian fortitude.

He was kindly and conscientious in all his dealings, and his untimely death was keenly felt by all his colleagues and friends.

He was elected a Fellow of the Society 1892 December 9. c. D.

CHARLES BURCKHALTER was born at Ohio on 1849 January 5. When still a young man he went to California and entered the insurance business in Oakland and San Francisco. He became so interested in astronomy that he devoted all his spare time to it. In 1885 he became a teacher of geography and astronomy with the direction of Chabot Observatory, then quite a small institution in the central part of Oakland.

Professor Burckhalter soon attracted attention as an astronomical enthusiast, and was appointed leader of an expedition organised by the Pacific Coast Amateur Photographic Association to observe the eclipse of the sun total in California in 1889. The results of this expedition are given in vol. i. of the *Publications of the Lick Observatory*. He joined the Lick Observatory Eclipse Expedition to Japan in 1896. He had charge of the expedition of the Astronomical Society of the Pacific for the eclipse in India in 1898, and he also observed the eclipse of 1900 May in the eastern United States. On one of these expeditions he succeeded in obtaining excellent photographs of coronal details by the use of a revolving occulting shutter to cut down the exposure on the brighter parts.