

Walter William Bryant.

THE recent death of Walter William Bryant came to us, his colleagues and past colleagues on the Royal Observatory staff, as a shock both painful and unexpected. Unexpected, because he seemed so strong, so wiry and virile, and his appearance gave no sign. Painful, because, in the first place, we shall hear no more those apt and shrewd remarks, a little cynical but not unkind, that were always a joy to us; but mainly because our thoughts and feelings go out in heartfelt sympathy with those dependent on him whom he has left behind.

Bryant came to the Royal Observatory at the beginning of the year 1892, when there were two vacancies on the staff to be filled, one caused by the appointment of Downing to the Superintendence of the Nautical Almanac Office, the other by the addition of an assistantship to the establishment necessitated by the growth of the work, and he took first place in the competitive examination. He had been a schoolmaster at Dulwich College, and his manner was a little didactic. Before that he had been a Scholar of Pembroke College, Cambridge, and had been twenty-first Wrangler in the Tripos of 1887, a place which those qualified to judge believed to have been below his merits, but to which he fell by some accident of health or examination. In the letter introducing himself to the Astronomer Royal (the candidates in the examination were nominated) he said that he was "quick at figures," and this he undoubtedly was, quick in thought also, and quick to speak. He said also that he had read physics as well as mathematics, which was considered a point in his favour, and from the beginning the Astronomer Royal designed that he should some day have charge of the Physical Department, represented by magnetism and meteorology, because of his knowledge of the subject. But at first he was put in charge of the Transit work and took his turn as one of the four regular observers with the Transit-Circle. The annual number of observations with this instrument had been about 6000, but in 1893 and the following years the average rose to more than eleven thousand, the increase being due, apart from some contributing circumstances, almost entirely to Bryant's zeal and ingenuity in devising small schemes for increasing the output. When Mr. Nash retired at the end of the year 1903, Mr. Christie realized his plan and put Bryant in charge of the Magnetic and Meteorological Department, where his taste for figures had much to feed on in the columns of meteorological observations, and he was continually surprising us with statements that some particular day had achieved a meteorological "record" of some complicated kind. On leaving the Transit-Circle he took his place as one of the observers of double-stars with the 28-inch telescope. He did this work no less assiduously than that with the other instrument, and leaves behind him contributions to this branch of astronomy of no small

value. He will be remembered as a regular attendant at the meetings of the Royal Astronomical Society, where he not infrequently interpolated into the discussion a remark or question of a pertinent kind, but he was naturally more prominent in the Royal Meteorological Society, of which he was Secretary in the years 1916 to 1920 and afterwards Vice-President. Contributions by him will be found in the Proceedings of that Society. He was the author of a *History of Astronomy* published in 1907, and of two books in a series of biographies on Galileo and Kepler respectively. He contributed considerably to ephemeral literature, and did a great deal of work in connection with the Astronomical Section of the International Catalogue of Scientific Literature.

As to the lighter side of life, Bryant was noted for his proficiency and endurance at the game of hockey. A Royal Observatory club for playing this game was established in the year 1893, which has since gained a wide reputation, and he played in its matches from the beginning of its career until he was of an advanced age, and then continued his interest by acting as the Referee. He was a clever chess-player, and in early life had been a representative of Cambridge in the inter-University match. He was musical—a skilful performer on the pianoforte and a singer, and this last-named talent was used in various churches in the neighbourhood of Greenwich, where he helped in the choir. Bryant married early in his astronomical life, and his family was numerous. His second son was killed at Gallipoli in June 1915, a grievous loss that he bore with characteristic fortitude. And as we gathered round his grave with his sons and daughters on a bright spring morning in early February, which would have delighted him as a “record,” we, echoing the words of the Vicar of the Church in which he had last helped, could not but think of his life of self-sacrifice and service—service to his children, his calling, his God,—whereby he compelled our undying respect.

Bryant's early home had been at Forthampton near Tewkesbury, where his father was a schoolmaster. He was born on 1865 Dec. 9, and married in 1894. His death on 1923 January 31 followed a serious operation, and he was buried in Shooter's Hill Cemetery on Saturday, February 3.

H. P. H.

The Causes of Climatic Variation.

THE evidence indicating that considerable changes in climate have taken place in past geological ages is very considerable. The last glacial period, during which most of Northern Europe and America were buried under a thick ice sheet, is the best known of these vicissitudes; but it is not so well known that a glacial