

Obituary.

G. J. Burns.

We have to record with regret the death of Mr. Gavin Burns, a man of fertile mind and originality of ideas that he had the capacity to develop by ingenious methods and experiment

as is shown in the many papers and notes that he contributed to the *Journal* of the Association, of which a brief synopsis follows.

Mr. Burns became a member in 1900 January, and in the following April began a series of papers with various titles that discussed the subject of the distribution of the stars in space and the rate of their thinning out, which he approached in this first paper by analysing statistically the proper motions given in certain charts by Proctor. There are seven or eight papers of this nature by him, but in the issue of the *Journal* for 1902 March he introduced a subject that he afterwards made peculiarly his own by contributing a paper under the title "The Light of the Sky." Its opening sentence is sufficiently explanatory. "On clear moonless nights there is a certain amount of light whereby surrounding objects are dimly perceptible. Part of this comes from the visible stars, but a much larger part is derived from the sky itself." The paper proceeds to point out methods for measuring the amount of this sky light, follows with some remarks on the Zodiacal Light and concludes with the opinion that this Light and the Gegenschein are really intensifications of a general luminosity pervading the whole sky and having the same origin.

This indicates the keynote of about a dozen contributions to the *Journal* of the Association by Burns in the next twelve years. Some of them describe experiments to determine the light of the night sky either by the use of photographic plates, by home-made colour-filters, by a telescope with iris diaphragm or with an apparatus made for commercial or domestic purposes known as the Holophane Lumeter that he had adapted for this work. In 1910 April he contributed to the *Journal* and also to the *Observatory* magazine of the same date articles that formed a summary, or history, of the phenomenon in question to which the name "Earthlight" had been given. This is, in effect, a faint band of light all round the horizon, first noticed by Benedict de Saussure observing from an elevation near Mont Blanc in 1788, and it was a subject of research about this date, 1910, by Mr. Yntema of Leiden. It is an essential conclusion from the observations of the last named, and also of some made by Mr. Burns that this light of the midnight sky increases from the zenith to the horizon, and a deduction from this, definitely stated by Mr. Burns, is that the earth and every planet possessing an atmosphere is surrounded by a feebly luminous envelope, the luminosity being due to the action of rays of some kind emanating from the Sun (22, 373). Collating this with present-day knowledge of the Heavside, and other possibly luminous layers in the upper atmosphere, and also the spectroscopic observations of the night-sky, now being carried on in various parts of the world at the instigation of Lord Rayleigh, the speculation does not seem unreasonable, but, on the other hand, somewhat prophetic. Mr. Burns in these articles varies his views in some particulars by suggesting that the aurora is simply earthlight of abnormal intensity, and that the luminous background of the night sky may be due in part to an extension of the Zodiacal Light as usually conceived.

It has seemed necessary to describe these papers somewhat fully as they are specially characteristic, but others that illustrate his versatility are only to be mentioned. The variation of Betelgeuse in 1902 December when the star was exceptionally bright, and the origin of lunar formations that he investigated by experimenting with melted pitch are subjects of early papers. At the meeting in 1920 May he read an instructive exposition of the then comparatively novel subject of Relativity, and a paper published in the *Journal* of 1922 Dec. on Relativity and the Motion of Perihelia, shows his skill in advanced mathematics. In 1912 he accepted the invitation of the Council to be the Director of the Section for the observation of Auroræ and the Zodiacal Light, a branch of the Association's work that had been organized twelve years earlier but had few adherents and up to that time had shown little activity. He began his duties by publishing in 1913 March the first Report of the Section, which consisted of references to all notes on the subject that had appeared in the first 20 volumes of the *Journal* with programmes for future work, and subsequently published interim reports in the *Journal* at comparatively rapid rate, giving the observations made by the members of the Section as they occurred. He relinquished this position of Director in 1928 October.

To add some personal details, Gavin James Burns was born at Ely, Cambridgeshire, on 1853 December 27, and after early school days at Brighton Grammar School and private study and attendance at the classes at Birkbeck College, London, he received the degree of B.Sc. of London University, and was appointed by the Civil Service Commissioners to a position in the Building Works Department of the War Office. He was stationed in turn at Gosport, Portsmouth, Malta, Weymouth, and Woolwich (1903). In the last thirty years of his life when living in Blackheath he took an active interest in the affairs of local organizations, and was for a time President of the Greenwich Antiquarian Society, to whose proceedings he contributed much by skilful and devoted work and by expert knowledge. He was also a member of the Woolwich Town Planning Committee and of the West Kent Scientific Society, of which he was President in 1914-15, and before which body he sometimes delivered the monthly lecture. The circumstances of his death, which happened on 1933 December 17, were somewhat curious. He was knocked down by a motor vehicle in the road near his home on November 17 and suffered a compound fracture of one leg, but had almost recovered from this a month later and in the afternoon of December 16 was looking forward to early convalescence. He died, however, 12 hours after from an affection of the heart, having nearly completed his eightieth year. Mr. Burns married in 1912 Miss Olive Randall of Weymouth. They have no family. He was of modest and unassuming manner, and though fluent as a public speaker was apparently unwilling to intrude in general conversation. It was due to his modesty that though entitled to military rank because of his professional position he preferred to forgo this, and not to be addressed as "major" or "colonel."—H. P. HOLLIS.