

Obituaries.

COLONEL ERNEST ELLIOTT MARKWICK, C.B., C.B.E., late Army Ordnance Department.—It is with deep regret that we have to record the death of Colonel E. E. Markwick. He had been in failing health for some time past, but had improved so much



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[Lafayette, Dublin.

COL. E. E. MARKWICK, C.B., C.B.E.

that his ultimate recovery seemed possible. The intensely hot weather of June, however, proved to be very trying to him, and, after a serious relapse, he passed away on July 4th.

Colonel Markwick was born in 1853, and was the eldest son of the late William Markwick, of East Acton, W.

From King's College School he entered the late Control Department of the Army in 1872, served in the Zulu War of 1879, and the Boer War of 1880-1, being present during the siege of Pretoria and mentioned in despatches. He took part in the Bechuanaland Expedition of 1884-5, for which he was honourably mentioned and specially promoted.

Colonel Markwick was Chief Ordnance Officer, Cork District, from 1887-93; Gibraltar, 1893-8; Western District, 1898-1903; 2nd Army Corps, 1903-4, and Assistant Director of Ordnance Stores, Southern Command, in 1905, in which year he retired from the Army and was awarded the C.B. (Military).

On the outbreak of the Great War he was appointed Assistant Director of Ordnance Services at Headquarters, Irish Command, Dublin, and served in that capacity for the whole period of hostilities and for his services received the C.B.E. (Military) on 1st January, 1919.

On reverting to retired life, he took up his residence at West Moors, Dorset.

Colonel Markwick was an enthusiastic astronomer, besides being much interested in painting, music and genealogy.

He married, in 1882, Amy, only child of F. M. Murton, of Natal, by whom he is survived, together with two sons and a daughter.

Colonel Markwick may be said to have begun his regular astronomical activities on July 19th, 1874, his 21st birthday, when his parents presented him with a 2 $\frac{3}{4}$ -in. refractor, systematic records of his observations having been begun on that date; and though in later years he became possessed of an 8 $\frac{1}{2}$ -in. alt-azimuth Calver reflector and a 4-in. equatorial Grubb refractor he never parted with this, his first telescope. In 1879 he became a Fellow of the Royal Astronomical Society and in October, 1912, he was elected President of the B.A.A. and held this office until 1914, when, owing to his enforced absence on military duty, his presidential address on "Stellar Variation" was read for him by the Astronomer Royal. For many years he was an active member of the Solar Section.

From the first he was attracted by solar, and still more by variable star, work, entering into a lively correspondence with the late Professor E. C. Pickering, who had just published (1884) the first *Harvard Photometry*, and was preparing his first sequences. He began observation of Mira Ceti in 1885, and determined his first maximum of this star 1886 Jan. 5. As one of the original Members of the B.A.A., he joined the V.S.S., then directed by the late Mr. J. E. Gore, as soon as it was formed. His first observations had been published in the *English Mechanic* and in *Knowledge*. He now published them in the *Journal* and the *Memoirs*. The first Report of the V.S.S.

(*Memoirs*, vol. I., part IV.) shows that his working list for 1891 included more than 60 stars of all types. At the beginning of 1893 he was sent to Gibraltar, and, "knowing he would probably be stationed there for some years," he determined to survey the zone $27\frac{1}{2}^{\circ}$ to 45° S. Dec. for variable stars. This survey consisted in identifying the stars on the maps of Gould's *Uranometria Argentina* with a pair of binoculars on one or two clear evenings each month, and in noting new or discordant objects, the observation of which was then pursued with the aid of his small refractor. Seventy-two suspicious objects were found in this way, and are listed in the Third Report of the V.S.S. (*Memoirs*, vol. VI., part II., 1896). The survey, which took five years, resulted in the discovery of four variable stars, two of which were new, and proved to be of more than usual interest—T Centauri and RY Sagittarii. T Centauri is a Mira star of small range (5.6—9.0 mag.), and of uncommonly short period (91 days), and may represent a link with the Cepheids. RY Sagittarii has a still more interesting history. On 1893 July 14 and 19 Markwick observed the star Co. D.— 33° 14076, estimating it as of the seventh magnitude, and a little brighter than the adjacent star— 33° 14068. In August he found it fainter than this star, and by September 12th it had become invisible in his binoculars, and fainter than the ninth magnitude. He, therefore, included it in a list of 42 stars suspected of variability which he forwarded to Professor Pickering. A report was sent to him that an examination of several photographs failed to show any sign of variability. A few days later, however, a star having a peculiar spectrum was discovered by Mrs. Fleming at Harvard. All the plates of the region were examined, and its variability fully established. This was about to be published in a Circular, when it was found to be identical with Markwick's star in Sagittarius. It was, therefore, reported to him for announcement, and he authorised the publication in H.C.O. Circular 7, which supplies the details here recorded. Subsequent observations have shown RY Sagittarii to be a Southern replica of R Coronæ Borealis. Like the latter, its light remains steady at about the 6th magnitude for months, after which it fades suddenly and irregularly, sometimes below the 13th magnitude. Its spectrum, classified as Gop, contains bright lines which show evidence of change. It would be a fitting tribute to Markwick's memory if Members in the Southern Hemisphere would devote more attention to this interesting variable, his chief discovery, which ought to be closely followed.

In 1898 Markwick returned to England, and he was nominated Director of the V.S.S. in 1899. It is no exaggeration to say not only that he was the real organiser of the Section, and that the credit for the importance which it rapidly acquired belongs to him, but also that by organising it as a co-operative body he made a bold start which exercised marked influence on variable star work in the world. He was not, however, the first astronomer who recognised the immense value of co-operation in the observation of variable stars. For as far back as 1882,

and again in 1891, in a pamphlet entitled "Variable Stars of Long Period," Professor E. C. Pickering had made a direct appeal to the "many astronomers, provided in some cases with excellent telescopes," who found "difficulty in using them in such a way as will really advance astronomical science" to observe seventeen circumpolar long periods, and "to send their results to Cambridge for reduction and publication on the same system as our own observations." The Harvard *Annals* show that a response was made to this invitation, but it cannot be said that the observers who thus sent their observations to Cambridge formed a corporate body. It is interesting to note in this connection that under the late Mr. J. E. Gore the V.S.S. published the observations as presented by individual Members, each on his own account. In his Third Report (1892) the Director went so far as to compare the estimates of the same star made by different individuals, but it never occurred to him that the great value of sectional work consisted in a concerted and systematic attack upon a small number of stars.

This, Markwick perceived at once. He drew up the "plan of work" described in the Fifth Report of the Section (1903), which consisted in (1) the adoption of a working list of 46 stars; (2) concentration of work on these stars; (3) the adoption of uniform magnitudes for the comparison stars; (4) the adoption of a uniform method of observation and of a regular form for recording the observations. And having made up his mind, he applied the power of organisation and the sense of discipline which his military training had given him to the realisation of his plan. It is easy nowadays, when the Section which he virtually created has become an active and united band of workers, with traditions of its own intensified by the efforts of his able successor, Mr. C. L. Brook, to underestimate the value of his pioneer work. In fact, he had to originate almost everything—plan of work, methods, charts, forms, circulars, reports, memoirs. And it is no mean tribute to his memory to find now that he had judged rightly; for not only have the arrangements made by him been kept substantially unchanged in the Section to-day, but they have served as models for the many successful organisations for the observation of variable stars which have been since formed in the United States (1911), in France (1920), in Scandinavia, Russia, Germany, and the Southern Hemisphere.

But, what is still more important perhaps, Markwick kindled and fostered the spirit which ought to animate a corporate body of "science volunteers," if it is to succeed—the spirit which requires the sacrifice, in some measure, of the individual to the common goal by merging separate efforts in one harmonious whole. His encouraging and instructive letters, in which he never neglected the human side, his hectographed circulars, of which he published no fewer than seventy-nine, his breezy reports—all tended to maintain and extend the spirit of devotion to and interest in the common work which is essential to any corporate body. And it may be remarked that, though no one

of the twelve original Members whose names were given in the first "Interim Report" (*Journal*, vol. X., p. 248; 1900) now appears on our roll, this spirit still animates the V.S.S. His work as Director is too well known to require detailed notice. His 29 "Interim Reports," the four *Memoirs*, and the Appendices published under his supervision, amply deserve the qualification of "exemplary" which such a master of the craft as Father Hagen once bestowed upon them. They indicate a careful and critical mind. The nature of his duties as Director necessarily entailed an immense amount of routine, which possibly distracted him from research work, although he was primarily gifted as a compiler, an observer, a leader, and an organiser. His generalisation of the fractional method, his use of "classes" (as distinct from "weights") are bound to remain. Mention should further be made of his important series of articles in the *English Mechanic* (Vols. 84 and 85, 1906-7): "Variable Stars, and How to Observe them." They form quite a compendium bristling with practical details, and it is a matter of regret that they have never been reprinted in book form.

After relinquishing the Directorship in December, 1909, he never ceased to display the most lively interest in the work of the Section, examining, and, in the case of certain short period variables, discussing in the *Journal* older observations, and always being ready to offer help and advice. "May we all have good weather, and health and strength to observe—and all unite in advancing our knowledge of stellar variation," were his New Year greetings in 1924. His death deprives the Association of a most staunch and loyal supporter, his fellow workers in the Variable Star Section of one to whom they all owe a lasting debt of gratitude, and many other of our Members of a friend whose memory will not soon be forgotten.