

A new method of obtaining the surface temperatures of stars directly from observation is announced by MM. Barbier and Chalonge in a paper following Prof. Greaves's address (*loc. cit.*, p. 273). These authors, recognizing the paucity of experimental information on atomic absorption coefficients, avoid their use altogether by dealing only with those early-type stars for which the total absorption coefficient is sufficiently great for the surface to radiate effectively as a black body. The criterion they use for selecting such stars is the size of the Balmer discontinuity: where this is large, the opacity below the Balmer limit will evidently be great. In this case there is a good chance that the radiation seen will originate mainly in the outer surface layers, the temperature of which will then be what is directly observed as the colour temperature of the star.

Evidence for this view is provided by observations of the eclipsing variable star Algol. The ultra-violet colour temperature of this star (which is typical, as to size of Balmer discontinuity, of the other stars considered) is found to be independent of the phase of the eclipse. Evidently the radiation from the centre of the disk is identical in composition with that from the limb (which is, of course, surface radiation). In this case, then, and by extension in the others also, the observed colour temperature is actually the effective temperature of the surface layers. The mean value for the A_0 stars selected is $12,500^\circ \text{K.}$, which is in fair agreement with the ionization temperature.

This valuable method of attack thus brings still nearer the prospect of reconciling the various 'temperatures' which can be assigned to stellar surfaces.

A. H.

OBITUARIES

The Earl of Crawford and Balcarres, K.T., F.R.S.

WE record with deep regret the death of the Earl of Crawford and Balcarres, which took place at Haigh Hall, Wigan, on March 8, at the age of sixty-eight years.

The Right Hon. Sir David Alexander Edward Lindsay was born on October 10, 1871, and succeeded his father in 1913 as twenty-seventh Earl of Crawford and as holder of other titles in the peerages of Scotland and the United Kingdom. He was educated at Eton and Magdalen College, Oxford, where he graduated in 1894 with first class honours in history. He afterwards entered upon a political career, and sat in the House of Commons, holding office on occasion, until he inherited the family titles. During the War of 1914-18 he served in France as a private and as a second lieutenant until in 1916 he was recalled to England to take up office as president of the Board of Agriculture and Fisheries. Later he held other offices in the Government, among them that of First Commissioner of Works, 1921-22.

Lord Crawford's interest in, and knowledge of, art and archaeology were both widespread and profound; and in the performance of his duties as First Commissioner of Works, he was brought into close touch with conditions affecting archaeological studies in Great Britain. Of this he made full and effective use both as president of the Society of Antiquaries and as a prominent figure in the various organizations which have had as their object the preservation of the antiquities, monuments and amenities of town and countryside in Great Britain. His charm and his personality, as well as his public experience and knowledge, made him an invaluable and most

effective leader in any and every cause in which the interests of archaeology were concerned, and it was owing very largely to his influence and persuasive powers that public and official interest in British antiquities was stimulated in post-War years to greater activity in archaeological exploration and also in preserving such relics of the past as remain from an over-zealous desire for improvement or the inroads of commercialism.

Lord Crawford had already acquired a considerable reputation as a scholar in artistic and antiquarian studies, notably in the field of Italian art, before his official connexion with the Office of Works. He published his well-known "Evolution of Italian Sculpture" in 1910. He was a trustee of the National Gallery and the National Portrait Gallery, and in 1923 became a trustee of the British Museum. He was chairman of the Fine Art Commission and a member of the Royal Commissions on Historical Manuscripts and Ancient Monuments, as well as of the council of the British School of Archaeology at Rome. His academic achievement and services to archaeological studies were recognized by honorary degrees of the Universities of St. Andrews, Cambridge, Edinburgh and Manchester. Of the last-named University he was the chancellor, succeeding the late Lord Morley in 1923. As chancellor, he took a very keen and active interest in the affairs of the University. In the following year came his election as a fellow of the Royal Society.

Lord Crawford's death will be mourned on personal grounds by all who knew him; it is no less a serious loss to the cause of humane studies, and comes at a moment when so outstanding a personality can ill be spared.