

During an evening session, to which a much wider audience had been invited, Dr. D. A. Spencer gave an account of present-day colour photography, illustrated by a cartoon film. This lecture was very much appreciated, and the large attendance showed the widespread interest created. The whole of the conference was very well attended, and the discussion was often very lively, demonstrating the need of informal meetings of this type, in which the aim is partly to bring forward new pieces of research, but partly also to relate already published information of the type not easily accessible to the physicist in industry. The hospitality and general arrangements pro-

vided by the Physics Department of the University of Manchester were very much appreciated by all participants.

W. F. BERG.

- ¹ NATURE, 140, 997 (1937).
² Gurney and Mott, *Proc. Roy. Soc., A*, 164, 151 (1938).
³ Wagner, *Z. phys. Chem., B*, 21, 25 (1933).
⁴ Papers by Garner, Wischin and Mott, *Proc. Roy. Soc.* In the Press.
⁵ Sheppard, *Phot. J.*, 65, 330 (1925).
⁶ Evans and Webb, *J. Opt. Soc. Amer.*, 28, 431 (1938).
⁷ Webb, *Phot. J.*, 76, 78 (1936).
⁸ Strock, *Skrifter utgitt av det Norsk Videnskaps-Akademi i Oslo*, (I) Mat.-Naturv. Klasse, No. 10 (1933).
⁹ Berg, *Trans. Farad. Soc.*, 35, 445 (1939).
¹⁰ *ibid.*, footnote, p. 458.
¹¹ Berg and Mendelssohn, *Proc. Roy. Soc., A*, 163, 168 (1938).
¹² Evans and Hirschlaff, *J. Opt. Soc. Amer.*, 29, 164 (1939).
¹³ Much of the matter of this lecture may be found in Ross, "The Physics of the Developed Photographic Image" (New York, 1924).
¹⁴ Hopkinson, *Phot. J.*, 76, 323 (1936).

OBITUARIES

Prof. J. Mellanby

THE death of Prof. John Mellanby on July 15 at the age of sixty years takes from us not only a great physiologist but also a notably genial and kindly personality. He will long be remembered by his colleagues and his students for his penetrating wisdom as well as for his ever-ready willingness to help.

Mellanby went up to Emmanuel College, Cambridge, in 1896 and took Part II of the Science Tripos in 1900, having been an early student under Gowland Hopkins, who had just begun to teach biochemistry at Cambridge at that time. From Cambridge he went to the research laboratory newly founded by Burroughs and Wellcome at Brockwell Hall, and worked there chiefly on the properties of serum proteins and their relation to antitoxins. He left there to complete his clinical course at Manchester and took his M.D. at Cambridge in 1907 and returned to the Cambridge laboratory as George Henry Lewes student. He was still engaged on protein solutions, and in particular on the phenomenon of clotting in blood and milk.

In 1909 Mellanby left Cambridge to take charge of the Physiological Department of St. Thomas's Hospital and began to use the measurement of the clotting-time of milk as a sensitive method for determining the quantity of active trypsin in pancreatic juice, and thus to work out the details of the formation of trypsin from trypsinogen. From the properties of the juice he went on to elucidate the mechanism of its secretion, and it is perhaps his work on this and on the purification of secretin which, together with his earlier investigation of clotting, form his best-known contributions to knowledge.

Mellanby became a fellow of the Royal Society in 1929 and at the time of his death was a member of its Council and of the Medical Research Council. But his purely physiological work was only one part of his activity. What was always in his mind was the encouragement of research from the clinical side,

and he was at all times anxious to help, both by advice and in practice, in any problem that might be brought to him. He felt that problems in medicine were problems in physiology and that both were only to be solved by experiment. Such problems arose in the most varied fields and were responsible, for example, for his work with Anwyl-Davies on the anti-coagulant action of arsenobenzol and the making of colloidal gold solution, and with C. R. Box on glycosuria.

In 1937 Mellanby became professor of physiology at Oxford and continued there the work on visceral movement to the study of which he had been led by his work on the effects of secretin. He finished an investigation of the changes in size of the spleen shortly before his death. In Oxford, as in London, he was in close touch with his clinical colleagues and his influence on the future of the Nuffield Foundation would have been of immense value. As a researcher he was outstandingly original and versatile, and it is safe to say that time will enhance his reputation in the fields which he made his own.

V. J. WOOLLEY.

Dr. M. A. Usov

THE death occurred on July 26 of one of the most eminent Soviet geologists, Mikhail Antonovich Usov, member of the Academy of Sciences of the U.S.S.R., and director of the All-Union Institute of Co-ordinated Geological Research.

Usov's work was mainly concerned with questions of tectonics and petrology. He elaborated a new method for the study of the tectonics of coal deposits, making use of the vast materials available from underground workings, to which geologists had until then paid little attention. An analysis of the breaks he had observed induced him to make an exhaustive classification of the forms of volcanic dislocations. This resulted in the appearance of several works on the tectonics both of individual mines and of the entire Kuznetsk Basin. In these works he revealed

the movement of the Cambrian formations from the direction of the Salair mountain range and the movement of the Devonian formations to the River Tom. These works have become standard guides for mining geologists working in the Kuznetsk Basin. Later, Usov extended his investigations to other parts of the West Siberian Territory. He made a thorough study of the phases and cycles of the tectogenesis of the territory from ancient times to the present day, laid down the principles for distinguishing them and surveyed the tectonic history of the region.

In two of Usov's published works on petrology, "Phases of Effusives" and "Faces and Phases of Intrusives" Usov synthesized the research of the most eminent petrographers, also giving the results of his own research, giving geologists working in the field a method for studying these rocks on the spot.

Usov created a big school of geologists at the Kirov Industrial Institute of Tomsk. He was very interested in the popularization of science, and wrote a number of popular works on geology. He was elected a member of the Academy of Sciences of the U.S.S.R. on January 30, 1939.

NEWS AND VIEWS

National Trust, 1938-39

It is significant of the increased interest of the public in Great Britain's treasures of natural beauty and historic interest—an interest that has grown in proportion as the dangers from building-development have increased—that in the last ten years the properties held by the National Trust or protected under covenant have more than doubled; they now total over 80,000 acres. The gross cost of upkeep, improvements and agents' salaries, according to the Annual Report for 1938-39, exceeds £29,000, while the income from letting, etc., of the properties amounts to £24,650, the difference being met by subscription. The new properties acquired in the period June 1938 to June 1939 number 37 and cover 2,965 acres. Among the more interesting or important acquisitions are 81 acres on Dunstable Downs, 224 acres at Hindhead, Surrey, and more than 900 acres of Dovedale and the Manifold Valley. In addition, 25 properties, covering 7,142 acres, were protected by covenant within the period. Extensive areas are now owned or protected in districts which have been mentioned as prospective national parks. In the Lake District, for example, the Trust now owns 12,000, and protects a further 19,150 acres, while on Exmoor it owns more than 9,000, and protects a further 900 acres. Of Dovedale and the Manifold Valley it owns or protects more than 4,600 acres. At present Cornwall has more coast owned or protected by the Trust than any county; but a considerable stretch of coast in Pembrokeshire will be affected by the recent appeal. The activities of the Trust have been greatly increased by the facilities for co-operation with local authorities under the National Trust Act of 1937, which is now working. Local authorities have already contributed large sums towards preservation schemes in their respective areas. One of the more important undertakings of the Trust, at least from the point of view of the archaeologist, is the custody of Stonehenge. Here additional fencing has been carried out and the café demolished; but work on the aerodrome is proceeding only very slowly.

Leadership in Democracy

THE seventh Walker Trust Lecture on Leadership entitled "Leadership in Democracy" delivered before the University of St. Andrews by Lord Lloyd on November 14 has been issued in pamphlet form (Oxford University Press. 2s.). Lord Lloyd insists that leadership is not the art of becoming and remaining a leader, but the art of leading. It is the opposite of dictatorship, inspiring free men with the feeling of moral obligation to follow. It requires will directed to a high purpose, clearly realized and defined, and courageously pursued. The need for leadership in a democracy, moreover, is even more urgent than in other forms of government because democracy as we know it in Great Britain is a new and untried system of government with no legal restrictions of rights on majority opinion. Lord Lloyd attributes the difficulties and dangers confronting us to-day largely to the absence of leaders who are able to inspire and guide the wills of men to the accomplishment of a high and disinterested purpose. Failure to make up our minds to positive action and to educate and enlighten public opinion has involved incalculable risks. The peril of democracy is its own failure to find the leadership necessary to make its high and necessary ideals triumphant in a world where men are neither naturally wise nor naturally virtuous.

THE worst sign of our loss of leadership is the tendency to regard democracy as synonymous with this or that piece of political machinery, regardless of whether the machinery is serving or is capable of serving the aims and ideals for which it was set up. Lord Lloyd urges that in a democracy a leader can only lead if he has the courage to be loyal to faith and conscience and to base all his principles upon them. The first task is to set before the people clearly the ends which they should seek and to show how these ends are shaped and determined by the requirements of Christian morality. Peace at home and abroad can only be based on justice, and if we are to play our part in the preservation of liberty here