and Royal Medal (1952). He received honorary degrees not only from a number of universities in the United Kingdom but also from universities in Eire, Canada, France, Italy and Norway. He was an Honorary Foreign Member of the American Academy of Arts and Sciences, the New York Academy of Science, the Weizmann Institute of Israel, Corresponding Member of the Royal Academy of Science of Spain and Foreign Academician of the Bologna Academy of Science. He was President of the Chemical Society from 1952 to 1954 and was knighted in 1958.

Ingold's contribution to chemistry was fundamental in the sense that a transformation in thinking arose from his work. His ideas on electronic structure of molecules and the ways in which bonds are broken and formed have become embodied in concepts and terminology which run not only through research work but also through the teaching of the subject. The developments in electronic theory came first. Recognizing the importance of polarization in determining equilibrium properties, Ingold related these to molecular constituents through the ideas of inductive and mesomeric effects. Developing the theory of chemical polarizability in parallel with that of polarization, he introduced the ideas of inductomeric and electromeric effects to account for electron displacements at the demand of a reagent. This extended the electronic theory of organic molecules to cover not only equilibrium properties but also chemical reactivity, and opened up the way to theories of reaction mechanism. He recognized that in mechanisms of chemical reactions a basic classification was provided by the distinction between two types of bond fission: homolytic and heterolytic. Following up the theory of electronic displacements in molecules he introduced the distinction between electrophilic and nucleophilic reagents according to their electronic demands.

In 1930 he was joined in the development of these ideas by E. D. Hughes and the two worked in close collaboration until Hughes's death in 1963. They introduced the concept of duality of mechanism, an important step forward because it provided a means of electronic classification that, together with earlier ones, formed the framework of a comprehensive theory of reaction mechanisms. In 1950, as Baker lecturer at Cornell University, Ingold began to bring together the developments which stemmed from these ideas and in 1953 he published his comprehensive *Structure and Mechanism in Organic Chemistry*. During his retirement he undertook the preparation of a second edition, expanding the original by some fifty per cent, bringing it up to date and completing it for publication in 1969.

From the middle 1930s onward, Ingold was also making important contributions in spectroscopy. His first work in this field was a pioneering study in the application of infrared and Raman spectra to isotopically labelled species in a detailed investigation of the benzene molecule. As a result of a second pioneering study he published an extensive set of papers on the properties of the benzene molecule in its first electronically excited state. Besides these studies, he investigated, in collaboration with G. W. King, the first excited state of acetylene, and established an important new principle, namely that electronic excitation may lead to a gross change in molecular geometry. His interests also took him into inorganic chemistry. In the early fifties he followed up ideas stemming from mechanistic studies in organic chemistry and extended these to a study of ligand replacement in metal complexes.

Ingold's knowledge of chemistry was vast and he had a remarkable insight into molecular behaviour. He combined these qualities with a powerful and critical mind which he could turn on almost any topic in chemistry. Whatever the subject of the weekly colloquia, which he rarely missed, he would unerringly go to the heart of the matter whether it concerned enzyme kinetics, spectroscopy, metal complexes or a variety of other topics. Incisively he would make his way to the centre of a problem and in a few terse sentences add illuminating comment. His breadth and depth of interest in chemistry led him naturally to build up an integrated department.

He was a courteous and kindly man, held in great affection by his students and those who worked with him. A mark of this affection was the publication in 1966 of a volume of tribute, *Studies in Chemical Structure and Reactivity*, edited by J. H. Ridd. A further mark of the affection and admiration in which he was held was the naming of the New Chemistry Building at University College after him at the official opening on September 25, 1970.

In 1924 he married Edith Hilda Usherwood who had already made important contributions to chemistry. He was the first to acknowledge how much he owed her, particularly for her support in his scientific work and in the administration of the department. He is survived by Hilda, their son Keith and two daughters.

Announcements

University News

Professor A. V. Crewe has been appointed dean of the Division of Physical Sciences, **University of Chicago,** in succession to **Professor A. Adrian Albert.**

Professor Glenn A. Berchtold has been appointed head of the Department of Chemistry at the **Massachusetts Institute of Technology,** in succession to **Professor John Ross.**

Dr Melvin Lewis has been appointed professor of clinical pediatrics and psychiatry at **Yale University.**

ERRATUM. In *Nature* for January 15 (**229**, 162; 1971), Mr William van Straubenzee, Parliamentary Under-Secretary of State at the Department of Education and Science, was wrongly reported to have used a form of words advocating the abolition of the means test now applicable to student grants. His real intention was simply to explore the case for and against a gap between school and university.

ERRATUM. In the article "New Interpretation of Extragalactic Radio Sources" by M. J. Rees (*Nature*, **229**, 312; 1971) the following corrections should be made: on page 313, for

$$1\left(-\frac{v}{c}\cos\theta\right)^{-1} \text{ read } \left(1-\frac{v}{c}\cos\theta\right)^{-1}$$

and for $\omega\left(\frac{\gamma}{f}\right)^{-1}$ read $\omega\left(\frac{\gamma}{f}\right)$;

on page 314, for $\left(\frac{4\pi n_2 e^2}{n_e}\right)^{\frac{1}{2}}$ read $\left(\frac{4\pi n_e e^2}{M_e}\right)^{\frac{1}{2}}$

and for $1-\left(\frac{(\omega_p')^2}{\omega^2}\right)^{\frac{1}{2}}$ read $\left[1-\frac{(\omega_p')^2}{\omega^2}\right]^{\frac{1}{2}}$

The requirement that waves continue to propagate outwards without dragging matter along is $\omega_p' \lesssim \omega$ not $\omega_p' \gtrsim \omega$; on page 315, line 17, for "therefore" read "thereafter". In equation (2) for $10^{4\cdot6}$ read 10^{46}, and for "infrared luminosity" read "inferred luminosity", in the second last paragraph of the same page.