A. R. Ubbelohde and his colleagues, Miss E. Rhodes and E. R. Buckle (Imperial College of Science and Technology, London), contributed a group of three papers which discussed the mechanism of melting and freezing. They demonstrated most convincingly that the classical thermodynamic picture of melting as the sharp intersection of two unrelated free-energy curves was inadequate for material composed of complex molecules or ions.

The largest group of papers in this section were detailed studies of particular solid systems. Silver oxide was shown by K. S. Pitzer (Berkeley) to have two anomalous regions in its heat-capacity curve. The first, in the region of 20–40°K., was still without a verified explanation, but the second, 370–470°K., was an annealing of surface and crystal defects. J. G. Aston (Pennsylvania State University) and E. F. Westrum (Michigan) both presented measurements of the heat capacities of systems containing highly symmetrical organic molecules, the *molécules globulaires* of Timmermans. Such systems are of particular interest since the symmetry and 'smoothness' of the molecules allow them to melt with respect to their orientations without disrupting the crystal. This orientation energy and entropy are acquired at one or more transitions below the true melting point. J. E. Spice (Liverpool) reported a detailed study of mixtures of ethylene dichloride and dibromide. The former has long been known to have a broad maximum in its heat-capacity curve at 180° K. On dilution with dibromide the peak moves at first to lower temperatures and becomes less pronounced. The behaviour of the system is, however, complicated by the partial immiscibility of the two solids.

The thermodynamic studies of indane and indene by D. R. Stull (Dow Chemical Co., Michigan) were most notable for the high degree of 'automation' in his calorimeter. This led to many questions regarding the time taken to reach equilibrium in many solid systems.

The magnetic transitions of the divalent salts of manganese, iron, cobalt and nickel were reviewed by J. W. Stout (Chicago). These systems provided unusually elegant examples of the entropy ($R \ln n$) associated with n available electronic states per ion. W. E. Wallace (Pittsburgh) has made a very detailed study by calorimetry and by electrical, magnetic and X-ray examination of the differences between the α and β phases of tantalum hydride and tantalum deuteride. The results were interpreted in terms of differing amounts of short-range and long-range order in the allocation of the hydrogen atoms to the interstitial sites. G. M. Schwab (Munich) reported a study of the α to β phase change in cobalt.

The last group of papers were those that dealt primarily with liquid phases, or in which the interest was in the application of theories of mixtures to the results. R. Heastie (Queen Mary College, London) had studied the phase equilibria of mixtures of krypton with argon and with xenon. The systems were miscible in both solid and liquid phases at the melting-point and the form of the melting curves provided a test for the lattice theories of solution of Prigogine. Unfortunately, true equilibrium in the solid phases was not always achieved. T. M. Storvick and J. M. Smith (North-Western University, Illinois) have studied the thermodynamic properties of mixtures of hydrocarbons and alcohols in liquid and gaseous phases at temperatures up to the gas–liquid critical points. The deviation of their results from those of purely hydrocarbon mixtures was interpreted in terms of the degree and heat of polymerization of the alcohol molecules. J. S. Rowlinson (Manchester) demonstrated that lower critical solution points are not confined to polar mixtures but are commonly found also in binary hydrocarbon mixtures if the size ratio of the constituent molecules is sufficiently large. This behaviour appears to be the rule for high-polymer solutions, almost all of which separate into two phases above the normal boiling-point of the solvent. Finally, R. I. Munn (Vienna) reported a careful re-examination of the phase-boundary curve near the lower critical solution point of the system water + triethylamine. The curve has an unusual, and unexplained, point of inflexion.

Three papers less easy to classify were given by K. S. Pitzer on "Irreversible Thermodynamics", D. White (Columbus, Ohio) on "*o-p* and Isotope Separations by Preferential Adsorption at Low Temperatures", and by G. Watelle-Marion (Dijon) on a spectrophotometric study of the ionization of a divalent–metal salt.

H. A. Skinner
K. Schäfer
J. S. Rowlinson

OBITUARY

Prof. F. Kögl

Prof. F. Kögl died on June 6 at Utrecht after an illness of about two years. From 1930 until his death at the early age of sixty-one, he had been professor of organic chemistry and of biochemistry at the State University of Utrecht.

Fritz Kögl was born on September 19, 1897, at Munich. He studied chemistry under such famous teachers as H. Wieland, H. Fischer and A. Windaus and became well known himself at an early age by his studies of natural pigments produced by certain bacteria and fungi. While a *Privatdozent* at Göttingen, he was called to a professorship at Utrecht in 1930 as the successor of Van Romburgh and of Ruzicka. Here he widened his field of activities enormously. Interest in growth phenomena of plants led to the isolation and characterization of the auxins. He and his co-workers were the first to recognize β-indolylacetic acid as a natural plant-growth hormone. The consequences of this work are well known to all dealing with the theoretical and practical aspects of plant growth. His studies of growth factors for micro-organisms led to the isolation and the partial characterization of biotin.

From normal growth processes Kögl turned his attention around 1939 to the abnormal growth occurring in animal tumours. He developed a daring hypothesis based on a presumed loss of stereo-specificity, resulting in the incorporation of D-amino-acids in tumour proteins. Although this theory could not be maintained against experimental evidence, it proved very stimulating for the continued biochemical approach to protein chemistry. During

the past ten years many new fields of current biochemical interest were tackled. Among these, important studies on diabetes, on membrane chemistry and on thermo-regulation in the warm-blooded animal must be mentioned.

It was a great satisfaction to Kögl himself that a problem started before 1930 was solved just before his final illness. This was the elucidation of the chemical structure of muscarin, the poisonous constituent of the fly-agaric (*Amanita muscaria* L.). The structure of muscarin had puzzled chemists for more than a century; Kögl and his associates concluded this chapter brilliantly by synthesizing the active compound.

Kögl was an inspired investigator and teacher. More than sixty doctoral theses are a lasting testimony of the School he founded. His death is a grievous loss to the University he served for almost thirty years. He is survived by his wife and two daughters.

G. J. M. van der Kerk

NEWS and VIEWS

Royal Society : Officers for 1960

At the anniversary meeting of the Royal Society, Sir Cyril Hinshelwood, Dr. Lee's professor of chemistry in the University of Oxford, was re-elected president. The other officers re-elected for the ensuing year were : Treasurer, Sir William Penney, member for scientific research, United Kingdom Atomic Energy Authority ; Biological Secretary, Sir Lindor Brown, Jodrell professor of physiology at University College, London ; Physical Secretary, Sir William Hodge, Lowndean professor of astronomy and geometry in the University of Cambridge ; and Foreign Secretary, Dr. H. G. Thornton, lately head of the Department of Soil Microbiology at Rothamsted Experimental Station. Other members of Council elected were : Prof. J. F. Baker, professor of mechanical sciences, University of Cambridge ; Dr. J. C. Burkill, University lecturer in mathematics, Cambridge ; Prof. D. G. Catcheside, professor of microbiology, University of Birmingham ; Prof. T. M. Harris, professor of botany, University of Reading ; Prof. L. Hawkes, emeritus professor of geology, Bedford College, University of London ; Prof. A. L. Hodgkin, Royal Society research professor ; Sir Patrick Linstead, rector of the Imperial College of Science and Technology, London ; Dr. R. A. Lyttleton, reader in theoretical astronomy, University of Cambridge ; Prof. H. S. W. Massey, Quain professor of physics at University College, University of London ; Prof. R. A. Morton, Johnston professor of biochemistry, University of Liverpool ; Sir Alfred Pugsley, professor of civil engineering, University of Bristol ; Prof. R. J. Pumphrey, Derby professor of zoology, University of Liverpool ; Prof. H. W. B. Skinner, Lyon Jones professor of physics, University of Liverpool ; Prof. W. Smith, professor of bacteriology at University College Hospital Medical School, University of London ; Dr. H. W. Thompson, university reader in infra-red spectroscopy, Oxford ; and Prof. J. Z. Young, professor of anatomy at University College, University of London.

National Chemical Laboratory : Dr. D. D. Pratt, C.B.E.

After thirty-four years as a member of the staff of the National Chemical Laboratory, Dr. D. D. Pratt retired from the post of director of the Laboratory on September 30, but in order to assist the new director, Dr. J. S. Anderson, he agreed to occupy the vacant post of assistant director for a period of two months. Born at Anstruther, Fifeshire, Dr. Pratt graduated at St. Andrews and received his post-graduate training both there and at Manchester under Prof. (now Sir) Robert Robinson. This period was interrupted by the First World War, throughout which he served as an officer in the Highland Light Infantry. In November 1925, a few weeks after its opening, Dr. Pratt joined the Chemical Research Laboratory, being appointed to take charge of research on tars, particularly those from the low-temperature carbonization of coal ; this work had several successful applications in industry. His ability was soon recognized by Dr. G. T. Morgan, who quickly promoted him until he was the senior officer under the director. When Morgan retired in 1938, Pratt was made officer-in-charge of the Laboratory for the six months which elapsed before Dr. G. S. Whitby became director. This was the first of several occasions when he was in charge under various titles, until finally he was appointed director in March 1951. His period in this office has been marked by considerable activity and expansion. The rapid increase in radiochemical work led to the creation of a separate laboratory for this purpose. The Microbiology Group was re-housed in a new building, while responsibility was also assumed for the National Collection of Industrial Bacteria. Under Dr. Pratt's leadership the Laboratory has grown in numbers, in size and in reputation. Its name has been changed to the National Chemical Laboratory, there has been some re-organization of the programme; but in spite of growth and change, Dr. Pratt succeeded in maintaining the friendly atmosphere which has always characterized the Laboratory. A friendly man himself, his numerous friends will join in wishing him many happy years of retirement.

Prof. J. S. Anderson, F.R.S.

Prof. John Stuart Anderson, professor of inorganic and physical chemistry in the University of Melbourne, has been appointed director of the National Chemical Laboratory of the Department of Scientific and Industrial Research at Teddington, in succession to Dr. D. D. Pratt. Prof. Anderson, whose work in Great Britain and in Australia has placed him among the leading workers in the field of inorganic chemistry, is particularly well known for his contributions in the fields of solid-state chemistry and the chemistry of complex salts. He was elected a Fellow of the Royal Society in 1953. Prof. Anderson was born in London in 1908. He graduated with first-class honours in chemistry at the Imperial College of Science and Technology, London, in 1928. After three years postgraduate research under Prof. H. B. Baker, he went to Heidelberg for one year. In 1932 he joined the staff of the Chemistry Department at the Imperial College. Six years later Dr. Anderson was appointed senior lecturer in chemistry in the University of Melbourne.