

were shown which are all available on request. Recent advances in chemotherapy have emphasized the potential importance of certain of the homologues of pyridine, and special attention has been given to the devising of methods for their recovery from crude-tar bases, and to the establishment of suitable analytical techniques. Jointly with the Physics Division of the National Physical Laboratory, a study of the thermochemical properties of pyridine homologues has been started.

Preparative work of the Organic Group has included the synthesis of a supply of a cinnolyl-guanidine derivative (at the request of the Medical Research Council) for large-scale trial as a trypanocide, applications of the Kolbe-Schmidt reaction, and new syntheses of organic compounds containing isotopic carbon. Use of naphthalene labelled with isotopic carbon has been made in a method of estimating the naphthalene content of tar oils. The method would be suitable for use in studies of the effectiveness of naphthalene extraction in large-scale processes.

In the High Polymers Group, work on semi-permeable membranes and ion-exchange resins was shown. The behaviour in non-aqueous systems of membranes prepared from polyvinyl alcohol is of outstanding interest. Using membranes of this type, polymer molecular weights from one million to two thousand have been determined by osmometry; in no case was there evidence of solute diffusion through the film (*J. Chem. Soc.*, 3190; 1952). Statistical analysis of the results has shown that the relationship between osmotic pressure and concentration is best satisfied by the equation,  $\pi = aC + bC^2$ , where  $a$  and  $b$  are constants. Simple osmometers (capacity about 3 ml.) based on the Zimm-Meyerson design have been constructed for use with polyvinyl alcohol membranes. A novel form of reversed-phase partition chromatography was exhibited. Cross-linked polystyrene beads are allowed to swell in a carbon tetrachloride solution of the water-insoluble complexing agent, for example, dithizone. The swollen beads behave as selective absorbents and may be used for the recovery and separation of metals from aqueous acid solution.

Another service of the Chemical Research Laboratory is the supply of bacterial cultures of industrial and research interest. The National Collection of Industrial Bacteria, within the Microbiology Group, now maintains some six hundred strains, most of which are preserved in the freeze-dried state. Methods of classification and maintenance were demonstrated. Responsibility for the maintenance of 'official' cultures of antibiotic-producing organisms has recently been assigned to the National Collection by the United Nations World Health Organization.

Fundamental research on the sulphate-reducing bacteria has included a study of their oxidation of lactic, malic, pyruvic and other acids with sulphate as oxidizing agent, and the discovery of a 'sulphate-free' fermentation leading to ethanol and acetic acid. Work on their utilization of hydrogen has shown that this can result in the reduction of fumaric to succinic acid. Evidence for a co-hydrogenase, replaceable by methylene blue, has been obtained. Investigations on the microbiological production of sulphur and sulphide from sulphate are in progress at the Laboratory and at the Microbiological Research Department (Ministry of Supply) at Porton. At the latter station, a continuous method of bacterial sulphate-reduction is being used; photographs and a diagrammatic flow-sheet of the apparatus used were exhibited.

## OBITUARIES

Prof. C. H. Lees, F.R.S.

PROF. C. H. LEES passed away on September 25, at the age of eighty-eight. He was a man of great charm and endeared himself to friends and students. Lees possessed great patience, and he was not to be deviated from the course he had set himself by difficulties when carrying out a piece of research.

Born in Glodwick, Oldham, in 1864, he was a student at the Owens College, Manchester, becoming Berkeley Fellow in 1888. He then studied at the University of Strassburg.

In 1891 Lees was appointed senior assistant lecturer and demonstrator in physics in Owens College and became lecturer and assistant director of the Physical Laboratories of the University of Manchester in 1900. He left Manchester in 1906 to become professor in Queen Mary College, where he remained until 1930, retiring with the title of emeritus professor of physics in the University of London.

Although Lees's first claim to fame lies in the field of thermal conductivity measurements, he was a man of wide interests. In the years between the two World Wars, he had students carrying out research on problems of acoustics, elasticity, light, electricity, as well as heat. He contributed papers on a.c. bridges and on fluid flow through pipes. The technique he used in thermal conductivity measurements now finds a place in the text-books. His *Phil. Trans.* paper on the thermal conductivity of metals to low temperatures was the subject for 1908 of the Bakerian Lecture of the Royal Society.

Lees was an excellent committee man and for more than twenty years served on the Engineering Committee of the Food Investigation Board of the Department of Scientific and Industrial Research. He also served on the Safety in Mines Board.

Education was a topic of great interest to him and for a long period he served on the Kent Education Committee and the delegacy for managing Goldsmiths' College, London. For a time he was vice-principal of Queen Mary College. He served as president of the Physical Society and vice-president of the Institute of Physics.

His hobby was handicrafts, and up to within a few days of his death he occupied his time with carpentry.

In the passing of C. H. Lees we mourn the loss of one of the 'old guard' of physics of the past generation and one of the greatest of friends.

EZER GRIFFITHS

### Prof. Millais Culpin

It is with regret that we record the death on September 14 of Prof. Millais Culpin at the age of seventy-eight. He was one of the brilliant group of psychiatrists revealed by the First World War.

He studied at the London Hospital and qualified M.R.C.S., L.R.C.P. in 1902, passing the F.R.C.S. three years later. It seemed that he was prepared for a surgical career and, indeed, he practised this for a time at Shanghai. However, when the War broke out, he joined the R.A.M.C. and became interested in war neurosis. Then he served in France during 1916 and 1917 as a surgeon, but still retained his psychiatric interest. At the end of this time he was asked by Aldren Turner to work in the Army neurological hospitals and there found ample material for research. His M.D. thesis in 1919 was devoted to his findings,

and the following year he published his "Psychoneuroses in War and Peace".

Culpin was then appointed lecturer in psychiatry to the London Hospital Medical School and neurological specialist to the Ministry of Pensions. In 1923 he joined in research on neurosis organized by the Industrial Health Research Board and in 1930 was made lecturer in psychology to the London School of Hygiene and Tropical Medicine. The year after, he was appointed to the chair of medical and industrial psychology, which he occupied until he resigned in 1939.

He had a remarkably lucid mind and often was able to see things from an unusual angle. His spare dry wit occasionally illuminated his points. His

writing, also, showed his clear, logical thought. He published a number of books, including "Spiritualism and the New Psychology", "The Nervous Patient", "Medicine and the Man", "Mental Abnormality: Facts and Theories", and, in collaboration with Dr. May Smith, "The Nervous Temperament". His best known work was "Recent Advances in the Study of the Psychoneuroses", which summarized all the work up to its publication in 1931.

Prof. Culpin was never a spectacular figure; but he leaves behind a solid basis of research and exposition which has earned him a place among the pioneers of dynamic psychology in Great Britain.

CLIFFORD ALLEN

## NEWS and VIEWS

### Institution of Mining and Metallurgy: New President

PROF. J. A. S. RITSON, professor of mining in the Royal School of Mines, London, has been elected president of the Institution of Mining and Metallurgy for the session 1953-54 and will take office at the general meeting to be held on May 28, 1953. Prof. Ritson was educated at Uppingham School and in 1910 took his B.Sc. in mining at the University of Durham. He acted for a time as manager of a colliery in Northumberland and then became an inspector of mines. In 1923 he was appointed to the chair of mining in the University of Leeds, where he remained until he went to the Royal School of Mines in 1935, in which year he was awarded the O.B.E. Prof. Ritson served throughout the First World War, eventually commanding a battalion of the Royal Scots, and gained the M.C. and D.S.O. and bar. During the Second World War he was director of supplies at the Ministry of Fuel and Power until the middle of 1942. Prof. Ritson is a past president of the Institution of Mining Engineers.

### Illuminating Engineering Society: New President and Awards

At the opening sessional meeting of the Illuminating Engineering Society held on October 14 at the Society's headquarters at 32 Victoria Street, London, S.W.1, Dr. W. J. Wellwood Ferguson took office as president of the Society for the session 1952-53. Dr. Ferguson, who is senior ophthalmic surgeon at the Royal Infirmary, Sheffield, and lecturer in ophthalmology in the University of Sheffield, is one of the relatively few ophthalmologists who take an interest in lighting and is the second of his profession to become president, the first being Sir John Parsons, who held the office during 1921-23. One of Dr. Ferguson's particular interests in lighting matters is the illumination of mines and miners' nystagmus, and he has published numerous papers on these subjects. He is the only ophthalmologist who takes an active part in the meetings of the International Commission on Illumination, and he serves on a number of sub-committees of the National Illumination Committee and on the Light and Vision Committee of the Medical Research Council. Recently, he visited the United States to study the work being done there in the use of cortisone in connexion with certain diseases of the eye.

The Leon Gaster Memorial Premium of the Society for 1952 has been awarded to Mr. J. S. McCulloch for his paper on "The Lighting of Shipyards"; Mr.

McCulloch is with R. W. Gregory and Partners (consulting engineers) of Newcastle upon Tyne. Honorary membership of the Society has been awarded to Prof. J. T. MacGregor-Morris, professor emeritus of electrical engineering in the University of London, in recognition of his many services to the Society and in acknowledgment of his pioneering work in illuminating engineering and photometry, particularly his research on the carbon arc as a standard of light; Prof. MacGregor-Morris is one of the original members of the Society and was president in 1940.

### The Biological Council

THE Biological Council, which is composed of representatives of some fifteen specialist biological societies, has recently resolved to become an advisory body to the Institute of Biology. It is expected that the closer relations between the Council and the Institute—formed on the initiative of the Biological Council—will be mutually beneficial. At a meeting of the Biological Council held on September 29, the following officers were elected: *Chairman*, Dr. W. P. K. Findlay (Forest Products Research Laboratory, Princes Risborough, Bucks); *Hon. Treasurer*, Prof. F. L. Warren (London Hospital Medical College); *Hon. Secretary*, Dr. J. L. Cloudsley-Thompson (Department of Zoology, King's College, University of London). All communications should be addressed to Dr. J. L. Cloudsley-Thompson, c/o The Institute of Biology, Tavistock House South, Tavistock Square, London, W.C.2.

### Technological Education in Manchester

At a ceremony on October 11 at the College of Technology, Manchester, which formed part of the jubilee celebrations of the College, the associateship of the College was conferred on the Minister of Education, Miss Florence Horsbrugh, and on Lord Cherwell and Alderman Wright Robinson. Although more than one speech emphasized the dependence of the economic future of Great Britain upon technicians and technologists, Miss Horsbrugh made no reference to the Government's plans for the expansion of higher technological education. She assured her audience that the claims of the Manchester College of Technology had been very fully presented to her, and that she would do her best to meet the needs of both university and non-university work there. She could not say how quickly the Government could carry out developments which would lead to a major change in the character of the College. Lord Cherwell referred to the increasing