

subject. He was interested in most aspects of the organic chemistry of amino-acids, and it is difficult to single out particular contributions. His work was distinguished by a real elegance in conception and great skill in execution. Thus, his model experiments on the formation of creatine from arginine anticipated by many years more recent work on the occurrence of this reaction in the living animal. Bergmann's papers covered the problems of acyl migration, racemization, reactions of  $\beta$ -hydroxy- $\alpha$ -amino-acids, unsaturated peptides, and many others. His crowning achievement during that period was, however, his novel and important general method of peptide synthesis. The classical methods of Fischer permitted only the preparation of peptides made from simple amino-acids. Bergmann's new method made use of N-carbobenzoxy derivatives of amino-acids; the acyl substituent protected the amino-group during the condensation and could afterwards be easily removed by catalytic reduction. This new method made possible the synthesis of almost any desired peptide.

Bergmann's work during his second, American, period was turning away from pure classical, organic chemistry, and more concerned with the structure and biochemistry of proteins. He showed for the

first time that the pure crystalline, peptic and tryptic enzymes which had been prepared by Northrop and his school would act not only on proteins, as had been thought hitherto, but also on certain peptides. The work dealing with the substrate specificity of these enzymes was of much importance for our knowledge of enzymes and helped greatly towards a better understanding of the structure of proteins. Bergmann's work also extended to the proteinases of plants and those of animal tissues. Another field in which Bergmann made very important contributions was that of the analysis and isolation of amino-acids present in proteins; he discovered many specific precipitating agents for amino-acids and devised new and interesting methods of analysis. Together with Niemann he formulated the so-called 'frequency-law', which assumed that the different amino-acids in a protein molecule are present in certain restricted proportions. Although the exact quantitative relationships assumed may have to be modified, the emphasis on stoichiometric regularities has greatly stimulated analytical work and focused attention on the regularity of the internal architecture of protein molecules.

The loss of Dr. Bergmann will be felt by organic chemists and biochemists all over the world; he leaves a widow and two children. A. NEUBERGER.

## NEWS and VIEWS

### Glass Technology at Sheffield :

Prof. W. E. S. Turner, O.B.E., F.R.S.

THE announcement that Prof. W. E. S. Turner is to retire from the chair of glass technology in the University of Sheffield, which he has held since 1920, comes as rather a shock. Prof. Turner's name has become so closely associated with the application of scientific principles to glass manufacture that it is hard to visualize the industry without this association. In 1914, Prof. Turner was responsible for the setting up of a Scientific Advisory Committee of the University of Sheffield to deal with technical problems arising in the local industries and, following on this work, was led to prepare a report on conditions in the glass industry. This report also made recommendations to the University Council, with the result that a Department of Glass Technology was set up in June 1915. This work was organized by Dr. Turner, as he then was, and in 1920 the Council converted this Department to a chair of the University. From that date to the present, Prof. Turner has made and established a name in connexion with the glass industry which will stand for all time.

Prof. Turner founded the Society of Glass Technology in 1916, and has been editor of the Society's journal throughout its existence. He has been president of the Society on two occasions, 1922-24 and 1937-38, and has acted as secretary for three long periods. Prof. Turner has also been instrumental in initiating international meetings between glass technologists in America, France, Belgium, Germany and Denmark, founding the International Congress on Glass, the first meeting of which was held in Milan in 1933. He was also responsible for instituting the Glass Convention, which brought together industrialists, administrators, commercial representatives and glass technologists. The teaching work of the Department under his guidance has been of such importance that many of his former students now occupy

important positions throughout the industry. His researches cover the whole range of glass technology and scientific research into glass and related problems. There can be few instances where one man has become so closely identified with an industry and where, in the lifetime of one man, and to a great extent due to his efforts, that industry has developed from one depending almost entirely on craftsmanship to the position where scientific control and mechanized processes have been so fully established.

### Dr. Harry Moore

DR. HARRY MOORE, who has been appointed by the Council of the University of Sheffield to succeed Prof. Turner on his retirement, will bring with him to the task the benefit of a broad academic training and research experience, coupled with exceptionally wide and specialized technological knowledge. After a distinguished student career at the Royal College of Science during 1904-7, followed by a year as a demonstrator in the Physics Department of the College, he was, in 1908, appointed lecturer in physics at King's College, London, a post which he held until 1915. While there he published in the *Philosophical Magazine*, the *Proceedings of the Royal Society* and the *Proceedings of the Physical Society* papers on the influence of X-rays on various substances. Another group of papers on X-rays appeared between 1924 and 1928 in the *British Journal of Radiology*. During 1915-19 he was busy in connexion with Ministry of Munitions training schemes, finally being transferred to the Ministry of Labour Training Department as chief technical officer for south-west England. In 1919 he was appointed assistant director of research of the British Scientific Instrument Research Association under Sir Herbert Jackson, and when Sir Herbert retired in 1933, Dr. Moore succeeded him. In 1937, Messrs. Pilkington Brothers decided to build and equip extensive research laboratories and invited

Dr. Moore to become the first director, a post which he still holds. He has served for some twenty-five years on committees of the British Standards Institution dealing with subjects related to instruments and to glasses for a variety of purposes; and since 1933 on the inter-departmental committee on optical glass set up by the three Service Departments. In April 1944 Dr. Moore was elected to the presidency of the Society of Glass Technology, and has been nominated for a second year of office. Dr. Moore, with his wise and genial personality and his wide experience of glass and its manifold applications, is an excellent choice for the variety of important activities centred in the work of the Department of Glass Technology of the University of Sheffield.

#### Fisheries Adviser at the Colonial Office:

Mr. C. F. Hickling

THE Secretary of State for the Colonies has appointed Mr. C. F. Hickling to be his fisheries adviser. This is the first time that the position has been filled on a permanent and full-time basis, Mr. Hickling's predecessor, Dr. E. S. Russell, having acted in a part-time capacity during a period of approximately two years. The possibilities for development and research in Colonial fisheries are very considerable, and the post of fisheries adviser is one of great opportunity. Mr. Hickling, who will take up his duties immediately, will be assisted and supported in his task by the Colonial Fisheries Advisory Committee which was appointed in 1943.

After taking his degree at Cambridge, Mr. Hickling engaged in postgraduate research at the Marine Biological Laboratory, Plymouth, and the Department of Oceanography, University of Liverpool, and in 1927 was appointed to the fishery research staff of the Ministry of Agriculture and Fisheries, in which he rose to the rank of senior naturalist. His work as a fishery investigator was of a high order; he published in several parts an excellent monograph on the hake and the hake fisheries, on which he became an acknowledged authority, together with many other papers on cognate subjects. His Buckland Lectures on the hake were published in 1934. During the War he has been acting as port fishery captain at Milford Haven with conspicuous success, and he has also found time to make a statistical study of the effects of the War upon the hake stocks, as yet unpublished.

#### Colonial Medical Research Committee

THE Secretary of State for the Colonies and the Medical Research Council have jointly created a Colonial Medical Research Committee to advise them on medical research for the benefit of Colonial territories. It is constituted as follows: Sir Edward Mellanby, secretary of the Medical Research Council (chairman); Colonel J. S. K. Boyd; Prof. P. A. Buxton, professor of entomology, London School of Hygiene and Tropical Medicine; Dr. A. N. Drury, director of the Lister Institute of Preventive Medicine; Brigadier N. Hamilton Fairley; Dr. W. H. Kauntze, chief medical adviser to the Secretary of State for the Colonies; Prof. B. G. Maegraith, professor of tropical medicine at the Liverpool School of Tropical Medicine; Dr. B. S. Platt, director of the Human Nutrition Research Unit, Medical Research Council; and Major-General Sir John Taylor. The secretary of the Committee is Dr. F. Hawking, of the National Institute for Medical Research, London, N.W.3.

#### Restoration of Pulkovo and Kiev Observatories

A FIVE-YEAR plan for rebuilding the famous observatory at Pulkovo on the outskirts of Leningrad is announced by the Academy of Sciences of the U.S.S.R. The main building is to be restored as it was originally, and such of the valuable equipment and instruments as were removed to safety before the Germans began the bombardment of the besieged city will be installed again. The Observatory was completely destroyed, and the cost of reinstatement is estimated as 137 million roubles. The world-renowned library could not be removed in time, and many irreplaceable books and manuscripts are lost to posterity. Adequate provision to restock the library includes the earmarking of 200,000 dollars for purchases abroad. Plans for work in the future suggest that the character of the institution is not to be changed: both fundamental astronomical work and astrophysical researches will be undertaken.

At Kiev, where less damage was done, work is so far advanced that this year's centenary of the foundation of the Observatory should see the whole of the staff back at work in a reconstructed establishment. With more warning of what was coming than their Pulkovo colleagues, the Ukrainian astronomers were able to transport most of the instrumental equipment to Sverdlovsk, 3,000 km. to the east, where they were given refuge during the occupation. On their return they found the observatory buildings empty, plundered and partly ruined by the fleeing Nazi army. Rebuilding has proceeded at such a speed, however, that new pavilions already house the 257-mm. refractor and the 120-mm. meridian circle, and regular observations and instruction have started again. Extensions on which work has already begun include a building for a proposed big modern refractor, an astrophysical laboratory and a deep basement for seismic work.

#### Technical Education in Scotland

SCOTLAND, a country that has long been education-conscious, is fully alive to the importance of technical education in modern social life, and the Interim Report on Technical Education recently issued by the Special Committee of the Advisory Council on Education in Scotland (H.M. Stationery Office, Edinburgh, 3*d.*) advocates national planning on an extensive scale in order to bring training facilities within the reach of all. The core of the planning consists in the proposed establishment of a National Advisory Council for Technical Education, and four regional advisory councils (with a fifth for the Highlands, if necessary), all fully representative of industrial, commercial and educational interests, in order to survey both national and local requirements and to co-ordinate development schemes. The needs of part-time as well as full-time students have been considered in connexion with the organization of central institutions and local technical colleges, the former capable of dealing with work of the most advanced type and in some cases performing the functions of peak institutions for specialized subjects; technical instruction is also envisaged in the new colleges for compulsory further education of young persons and in voluntary day and evening classes where technical colleges cannot be established. It is realized that the new proposals will involve heavy financial commitments, and the National Council would therefore be required to make recommendations to the Secretary of State as to expenditure that is desirable. The proposals in the report are on a bold scale and well