

the corridors at China Union Medical College would pause to look at illuminated model scenes inset into the walls, which explain the cycles of transmission of the chief helminthic infections known in the Chinese countryside. Will it not make some difference to the world that five hundred million people are awakening to the significance of natural science and all that that implies?

Next, something may be said of a few of the researches which have been proceeding during the past three years. Stimulated by the importance of ethyl mercury chloride as a fungicide, the Institute of Physical Chemistry of the Academy has been studying the role of catalysts in the formation of this and similar compounds. The Institute of Organic Chemistry has been working on plant hormones and possible new antibiotics derived from certain plants traditionally used in Chinese medicine. From the point of view of economy it would obviously be of advantage to use as many of these as possible, and they are now undergoing more extensive study by modern methods than ever before; the China University Medical College, for example, has a special department for the investigation of Chinese materia medica. In physiology there has been work on micro-analysis of potassium, sodium and phosphorus in nerve tissue during activity. The Laboratory of Developmental Physiology has completed researches on the structure and mode of action of the eye-stalk hormone of Crustacea, and has isolated an active substance in the form of its cadmium complex. Systematic botany and zoology are being actively pursued by many workers; often in connexion with important practical problems, such as forestry, fisheries, and the epidemiology of rodent-borne plague. The palaeontologists have been studying fossils of dinosaurs and their eggs at Laiyang in Shantung Province. They have also conducted large-scale excavations in the Choukoutien area near Peking in connexion with *Sinanthropus pekinensis*, the precious specimens of which were lost during the confusion of the Second World War, and are widely believed to be still in American hands. Palaeobotanists have been concentrating on the mesozoic fossils of the Szechuan basin, and the redwood fossils in the coal beds of Fushun in southern Manchuria. Important work has been done by the Metallurgical Institute on new kinds of nodular graphite cast iron with superior strength and properties favourable to mechanical treatment. Its Kunming branch laboratory has been occupied with problems relating to the bauxite deposits of Yunnan province, and similar local needs. In so short a review as this it is, of course, impossible to do more than allude to a few of the subjects on which research is proceeding.

In conclusion, a few words may be said regarding the philosophical point of view of Chinese science to-day. In accordance with the world-outlook which has triumphed in China, Chinese scientists are greatly interested in dialectical materialism. The fact that there is very little opposition to it is noteworthy, and arises from several causes. There was never any strong strain of metaphysical idealism, such as that represented by Eddingtonian views, in Chinese thought. On the contrary, its finest formulation by the school of Chu Hsi in the Sung dynasty (twelfth century A.D.) was remarkably congruent with dialectical materialism, for this school worked with but two concepts: *ch'i*, matter, including its most tenuous forms, and *li*, the pattern or organization of things. These patterns were explicitly recognized to be

arranged in levels of organization. For this world-picture dialectical materialism may readily be considered a continuation. In other words, the age-old and refined conceptions of Chinese humanism are fusing with dialectical materialism without that stress and strain felt in a Europe which has so long been the battlefield of irreconcilable opposites—either theological spiritualism, or atoms and the void.

## OBITUARIES

Prof. F. E. Weiss, F.R.S.

THE death of Frederick Ernest Weiss on January 7 at the age of eighty-seven severs one of our last direct links with the great men who, in late Victorian times, created the science of biology in Britain. The son of parents who were outstanding for their strength of character and high principles, he was born in Huddersfield on November 2, 1865. When he was seven years old his father died, and his mother with five young children moved, first to Heidelberg and later to Neuchâtel, to obtain a good education for her family.

Returning to England, Weiss entered University College, London, in 1884, with the object of taking a degree in botany; but in his first year he came under the spell of Ray Lancaster and devoted much of his time to zoology. He learned his botany from Prof. Daniel Oliver, D. H. Scott and, in his third year, from Prof. Frank Oliver, who had just come from Cambridge to succeed his father in the chair. After graduation, Weiss spent some time at Naples in research on *Amphioxus*, but returned to the study of botany as Quain student and lecturer in botany at University College. Three years later he was appointed professor of botany in Owens College, Manchester—now the University of Manchester—in succession to W. C. Williamson, the famous palaeobotanist. Weiss held this chair until his retirement in 1930, and was responsible for the erection of new laboratories, and for the creation of a notable school of botanical study and research from which many well-known botanists originated.

Weiss followed his predecessor at Manchester in carrying on research on the structure of Carboniferous plants, especially on their root systems; but he also carried out investigations on pollination, seed dispersal, genetics and on graft hybrids. He took a keen interest in the study of vegetation, assisting in the work of the British Vegetation Committee and later in the foundation of the British Ecological Society, of which he was president during 1924–25. He devoted much of his time to the development of the botanical department of the Manchester Museum, and for many years gave a course of popular lectures in connexion with the Museum. His services to his University were considerable. Besides long periods of membership of its Council, he often acted as pro-vice-chancellor and served as vice-chancellor during two critical years, 1913–15. The appreciation of his work was shown by the award of the honorary degree of LL.D. He was a faithful supporter of the British Association, and was president of Section K (Botany) in 1911. He became a Fellow of the Royal Society in 1917, and served on its council.

After retiring from his chair at Manchester, Weiss moved to the neighbourhood of Guildford and spent much of his time at the garden of the Royal Horti-

cultural Society at Wisley, where he was chairman of the Scientific Committee. He was a member of the Council of the Society for two periods between 1935 and 1946 and served on its Library and its Scientific Committees, as well as on its Examinations Board. His service to horticulture was recognized by the award of the Victoria Medal of Honour in 1947. He also devoted much time to the Linnean Society, serving as its president during 1931-34. In 1937 he was president of the South Eastern Union of Scientific Societies.

Weiss was a man of exceptional charm and kindness, combining wisdom and experience with modesty and tact; he was loved and respected by all who had the privilege of knowing him. He had wide interests, not only in science and education, but also in social betterment and in the improvement of Manchester and its surroundings. He took and maintained an unflinching interest in the welfare of his students and younger colleagues; he was always ready to give them help and advice. In all his many interests and projects he was helped by his wife Evelyn, third daughter of the Right Hon. Dr. Robert Spence Watson, whom he married in 1898, and who, with their three daughters, survives him.

H. HAMSHAW THOMAS

#### Sir James French

WE regret to record the death of Sir James Weir French, which occurred at his residence in Glasgow on January 14, at the age of seventy-six. James Weir French was born in Glasgow in April 1876 and was educated at Bearsden Academy and the University of Glasgow, where he graduated as B.Sc. in 1898; the degree of doctor of science was conferred on him some years later. While still at the University he entered the firm of Barr and Stroud and was appointed a director when the firm became a limited company in 1913. He was chairman of the firm from 1938 until he retired in 1949.

Sir James French had travelled widely and had gained considerable technical experience abroad. After the First World War, he was attached as an expert to the Inter-Allied Control Commission in Germany. He was knighted in 1941 in recognition of his contribution to the equipment of the Fighting Services.

Among important offices held by Sir James French in academic and scientific institutions and societies, he had been chairman of the governors of the Royal Technical College, Glasgow, president of the Royal Philosophical Society of Glasgow and lay chairman of the Glasgow Art Club.

Sir James's main energy was devoted to the design and development not only of the scientific instruments manufactured by Barr and Stroud, but also to the special optical machinery and materials necessary for their manufacture. During the First World War, when supplies of optical glass became critical, he was associated with the late Prof. Barr in the development and production of optical glass suitable for the highest standard of optical instruments. The subsequent large-scale production for the firm's instruments was largely due to his energy and initiative in devising the manufacturing processes and designing and constructing the necessary plant and equipment.

Sir James French published many scientific papers, chiefly on optical subjects; but his wide and detailed knowledge of the history of glass and porcelain, including those of ancient Egypt, made his papers on this subject of particularly wide interest.

#### Prof. J. S. S. Brame, C.B.E.

JOHN SAMUEL STAFFORD BRAME, who died on December 10 at the age of eight-one years, was an authority on fuels and lubricating oils. He was educated at St. Thomas Rich's School, Gloucester, and commenced his scientific studies and training at the Royal College of Science. In 1897 he joined the staff of the Royal Naval College, Greenwich, as an assistant to Prof. V. B. Lewis, who held the chair of chemistry. The latter so greatly influenced Brame that under his guidance he specialized in oil technology and combustion, especially that of oils in furnaces; Brame here laid the foundation for his life's work. This association with Prof. Lewis, a founder member of the Institute of Petroleum Technology, finally brought him to the highest position in this field, namely, president of the Institute.

When Prof. Lewis resigned from the chair of chemistry in the Royal Naval College in 1914, Brame was appointed as the first professor of chemistry and metallurgy, a position which he held until his retirement from the College in 1932. During the whole of this period he lectured upon petroleum in all its aspects, and carried out investigations connected with lubrication, combustion, etc. When it was proposed to use oil as a fuel for the Royal Navy, Prof. Brame took a keen interest in this proposition; he carried out experiments on the numerous oil-burning locomotives of the (then) Great Eastern Railway, and from this experience was able to indicate certain conditions for the burning of oil on ships.

On leaving the Royal Naval College, he was appointed a director of Messrs. Alexander Duckham and Co., Ltd., lubrication oil specialists, and held the position of technical adviser until 1939.

For many years Prof. Brame lectured at the Sir John Cass College, London, on oil technology. These lectures were considered a very important part of the educational system devised and financed by various oil companies for the training of their staffs.

During his activities at the Royal Naval College and at the Sir John Cass College, Prof. Brame held many important posts, including the chairmanship of the Standardization Committee of the Institute of Petroleum Technologists, a subject in which he was always interested. He was a Fellow of the Royal Institute of Chemistry, and of the Chemical Society. He was made a Commander of the Order of the British Empire in the New Year's Honours, 1930.

F. A. RUDDOCK

WE regret to announce the following deaths:

Prof. Paul Niggli, professor of mineralogy and petrology in the University of Zurich and in the Swiss Federal Institute of Technology, Zurich, and also *correspondant* for the Mineralogical Section of the Paris Academy of Sciences, aged sixty-four.

Lieut.-Colonel J. S. Vorley, C.B.E., director of national parks, Southern Rhodesia, and formerly of the Indian Forest Service, on January 2, aged fifty-four.