substantially identical with our own. The observed difference in the grain spacing of the meson tracks, in the *B*1 and *C*2 emulsions employed in the two experiments, is in good accord with expectations based on the known recording properties of the two types. The agreement between the results of observers in two different laboratories, working entirely independently with different experimental material, is a definite proof of the reliability of the photographic method in its present stage of development.

We have recently completed mosaics of two more of the six disintegrations referred to above, and reproductions of them are given in Figs. 5 and 6. We have also observed a number of disintegrations in which particles are emitted which are scattered more frequently than a proton of the same range, but which are more heavily ionizing than a meson of mass 240 m_e.

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OBITUARIES

Dr. D. Jordan Lloyd

DOROTHY JORDAN LLOYD was born in 1889, the daughter and grand-daughter of two prominent surgeons in Birmingham. It would appear natural that her early studies at Newnham College were in zoology, later physiological and then physico-chemical studies of muscle. During the First World War, her scientific pursuits were diversified, and under the auspices of the Medical Research Committee she was one of a team which studied substitutes for components of culture media for bacteria which were then in short supply. Then her brilliant short paper on the causes and prevention of ropiness in bread was most appropriate to war-time, and indicated the versatility of her mind. Under the stimulating influences of Gowland Hopkins and particularly of W. B. Hardy, she was led to the long-sustained studies of swelling in colloidal systems, which when carried over to the 'structured' proteins in animal skins gained for her the firmly established international reputation as the authority on the chemistry of leather which she held at her death on November 21, 1946. Thus, zoology in Part II of the Tripos followed by the M.A.(Cantab.), research in physiology followed by the D.Sc.(Lond.), after some interval the fellowship of the Institute of Chemistry in 1922, authorship of a standard work, "Chemistry of the Proteins" (first edit., 1926; second, with Ann Shore, 1938) and the directorship of the British Leather Manufacturers' Research Association (1927–46) are the signposts of an exceptional career.

The output of Dr. Jordan Lloyd's published work both in pure and applied chemistry is impressive. Returning after the First World War to her main line of research, she published her earliest papers under the auspices of the Medical Research Committee on the swelling of gelatin; but most of her work on this subject, and indeed by far the greater part of her scientific publications, was published after she joined the staff of the British Leather Manufacturers' Research Association in 1921. Her early work followed on that of Procter by establishing the swelling curves of gelatin as affected by hydrogen ion concentration, and demonstrating the effect of salts on the swelling. Later she showed how lyotropic effects are superimposed on the swelling effects of the Gibbs–Donnan theory, and illustrated the temperature effects which that theory predicts. She emphasized the importance of the balance between osmotic pressure and cohesion in controlling the degree of swelling. This work was extended to a study of the swelling of protein fibres (collagen, silk, hair) in aqueous systems, in which not only the water uptake but also the changes in length and thickness of the fibres were followed; these changes are of importance in giving a more detailed picture of the effects of swelling on the individual fibres and on the interwoven structure of hides. These studies of fibres showed the effect of hydrogen ion concentration on swelling, in so far as it produces salt formation by the protein, and also illustrated certain lyotropic effects. The weakening of the structure of the fibres which was observed in certain conditions was linked with the study of the molecular structure of fibrous proteins.

A number of Dr. Jordan Lloyd's papers deal with the closely related subjects of the chemical make-up of the fibrous proteins, and its bearing on their structure, water relationships and swelling properties. She carried out experiments on the amount of water in gelatin which is 'bound', that is, associated with specific groups in the protein molecules, and is to a considerable extent independent of osmotic effects. In addition to these studies of the molecular structure of fibrous proteins, she investigated the fibrous structure of hides and skins, and showed how the swelling properties of collagen fibres are affected by the sheath or network ('reticulin') which surrounds them and can be broken by strong swelling or weakened at very low and very high *p*H values.

The above work dealt with proteins in aqueous systems. In later developments Dr. Jordan Lloyd turned to a study of the effects of non-aqueous liquids (organic solvents and acids), using changes in volume, dimensions and extensibility of fibrous proteins in these liquids, to throw light on the nature of the cross-bonds which hold the protein molecules to one another, and on the orientation of these molecules in the fibres.

Her keen sense of the applicability of this mass of scientific results to the processes of the industry was coupled with a resolution and an unfailing affability towards industrialists and their technicians which was an immense advantage to the Research Association. The long series of her lectures, well attended by its members and their technical personnel, and based on the work in progress in the Association's laboratories, were symptomatic of her hold on the imaginations of those in the industry, and illustrated her wide grasp of the application of science to it. In the industry the measurement of hydrogen ion concentration and buffer index became usual, particularly in heavy-leather tanning; the use of the microscope and the correlation of photomicrographs with composition and use of tan liquors led to control of quality in leather in general and also in its production for special purposes—a control not hitherto attained; the disposition of the tanned fibres in leather is now related to its various measurable physical properties, and hence to quality and serviceability—such have been developed largely by her leadership and enthusiasm, which have contributed

much to the gradual change of leather production from a chancy industrial art to a sequence of processes scientifically controlled.

Miss Jordan Lloyd was perhaps unique among the scientific women of her time—a vigorous and vivacious leader of her mixed team both in triumph and tribulation (for her laboratories were twice wrecked in the 'blitz' on Bermondsey); a clear thinker and good speaker with a constructive mind; a manager with ability to delegate; a research worker herself who displayed an arresting interest in the investigations of many others; and with a demeanour and practical outlook in the tanneries which appealed to the employers and their technicians. She can have perhaps no more fitting epitaph—and one possibly no more welcome to her—than the impressive volumes now appearing which describe the results of twenty-five years of research for the British leather industry by the British Leather Manufacturers' Research Association under her inspiring leadership.

ROBERT H. PICKARD

WE regret to announce the following deaths:

Dr. F. F. Blackman, F.R.S., formerly reader in botany in the University of Cambridge, on January 30, aged eighty.

Prof. James H. Leuba, emeritus professor of psychology at Bryn Mawr College, Pennsylvania, on December 8, aged seventy-eight.

Prof. L. W. Lyde, since 1928 emeritus professor of geography in the University of London, on January 24, aged eighty-three.

Dr. F. B. Mumford, emeritus dean of the College of Agriculture, University of Missouri, on November 12, aged seventy-eight.

NEWS and VIEWS

Advisory Council on Scientific Policy: Sir Henry Tizard, K.C.B., F.R.S.

MR. ARTHUR GREENWOOD, Lord Privy Seal, has announced in a Parliamentary written reply that it has been decided, in addition to the establishment of the Defence Research Policy Committee, to set up on the civil side an Advisory Council on Scientific Policy to advise the Lord President of the Council in the exercise of his responsibility for the formulation and execution of Government scientific policy. The chairman will be Sir Henry Tizard, who is also chairman of the Defence Committee, and the staffs of the two bodies will work in close association. The Council will include the heads of the principal Government scientific organisations and a number of scientific workers from outside the Government service. The former Scientific Advisory Committee will now cease to exist. The latter, it will be recalled, was set up in October 1940, and consisted of the president and secretaries of the Royal Society, and the secretaries of the chief Government research departments, under the chairmanship of Lord Hankey. In the new Advisory Council the choice of membership has been somewhat extended, but presumably its functions will be roughly the same.

As chairman of the Defence Research Policy Committee and also of the Advisory Council on Scientific Policy, Sir Henry Tizard will occupy a unique position in the scientific life of Great Britain. For this he is admirably fitted. Apart from a distinguished academic record which gave promise of exceptional ability, his work during and after the First World War in aeronautical research and his influence on British aircraft development made him well known in scientific and engineering circles. A short period (1927–29) as permanent secretary of the Department of Scientific and Industrial Research when that Department was becoming established gave him first-hand knowledge of State administrative machinery. From 1929 until 1942 he was rector of the Imperial College of Science and Technology, London, and since 1942 he has been president of Magdalen College, Oxford. Thus he has unusual experience in scientific, engineering and administrative fields such as few can boast, which makes the choice of Sir Henry for the chairmanship of the new bodies for the organisation of defence and scientific research a particularly appropriate one.

Thomas Alva Edison (1847–1931)

THOMAS ALVA EDISON was born in the then village of Milan, Ohio, on February 11, 1847, and died at West Orange, New Jersey, on October 18, 1931, at the age of eighty-four. Many years before Edison's death, Sir Richard Gregory wrote in his "Discovery, or the Spirit and Service of Science", "Thomas A. Edison is the embodiment of the method of specialised research with a practical purpose. By quickness of perception, fertility of resource, and persistent trial of everything until the best means of achieving his end has been found, he has become the leading inventor in the world." It is not far short of seventy years since the journalists of America raised him to the status of a sort of national hero. His first triumph was achieved when as a boy of fifteen he set up, printed and published a newspaper on a running train. By twenty-one he had secured the first of his thousands of patents and resigned an appointment with a telegraph company in order to bring out his inventions. From that time, patent followed patent, and in 1876 he founded the famous laboratory at Menlo Park, New Jersey, where he employed both men of science and men of skill to carry out his ideas. In quick succession came a series of innovations in telegraphy and telephony, the phonograph, photography, and in all that appertained to the generation, distribution and utilization of electricity. All that he did has to be studied with a knowledge of what had been and was being done by others, for he always made the fullest use of contemporary discoveries.

It was largely through the exhibition of Edison's 'Jumbo' dynamos and the incandescent lamp, in the United States and at the Paris Exhibition, that his reputation became world-wide. From his work on these things sprang the plans for the Pearl Street Electric Power Station in New York and the similar station at Holborn Viaduct, London, both of which were put into operation in 1882 for lighting the neighbouring streets and business premises. Some four hundred lamps in the telegraph operating room in the General Post Office, Newgate Street, were supplied with current from Holborn Circus. Edison was only thirty-five at this time, but he was probably at the height of his powers. His work and list of patents taken out afterwards, however, is impressive. In fertility of ideas he was perhaps only rivalled by his countryman Hiram Maxim. In later life he was