O. W. Richards, Department of Zoology and Applied Entomology, Imperial College of Science and Technology, S.W.7; Dr. M. A. H. Tincker, The Laboratories, Royal Horticultural Society, Wisley; Prof. T. Wallace, Long Ashton Research Station, Bristol; Dr. E. B. Worthington, Freshwater Biological Association's Laboratory, Wray Castle; J. Z. Young, Department of Zoology, Oxford.

OBITUARIES

Prof. J. H. Priestley

PROF. JOSEPH HUBERT PRIESTLEY died at Leeds on October 31 at the age of sixty-one. He was born at Tewkesbury in 1883 and educated at Tewkesbury Grammar School (of which his father was headmaster) and at University College, Bristol. He was a graduate of the University of London and, in 1905, took charge of the Department of Botany at Bristol. In 1911 he succeeded V. H. Blackman as professor of botany in the University of Leeds. On the outbreak of war in 1914, he was in command of the University Officers' Training Corps and, as a captain, went to France with the B.E.F. During 1915-19 he served on the Staff (Intelligence), being twice mentioned in dispatches and awarded the Distinguished Service Order. In 1919 he became a Chevalier of the Crown of Belgium. After his return to Leeds, he built up a large and active botanical department there. He was a fellow of the Linnean Society and president of Section K (Botany) at the British Association meeting at York in 1932. He had for long served on the Forestry Commission, and also took a very great interest in the work of local naturalists, particularly of the Yorkshire Naturalists' Union, of which he was president in 1925.

Priestley was a man of such extreme vigour that it is not easy to give a balanced account of his activities. Quite apart from his service as a staff officer, he left his mark in each of three fields, as an administrator, as a teacher and as a botanist. To some extent, his work in each of these fields suffered from his continued and intense interest in the others, but the wider range of accomplishment was characteristic of the man.

At the time of his death, Priestley was the senior professor at Leeds, had long been a member of the Finance Committee and had served as pro-vice-chancellor for some four and a half years. His opinion on any matter of university administration was worthy of his long experience and profound interest. He had an almost equally long acquaintance with the work of the Joint Matriculation Board, of which he served as chairman; and as the head of a large department he could have had few, if any, equals. His powerful administrative judgment was based on mastery of detail, on great practical capacity and on a profound appreciation of the mentality of his fellow-men.

His botanical work started with the investigation, with F. L. Usher, of the role of the pigments in photosynthesis and the attempt to study their action *in vitro*. He was, however, chiefly interested in problems of growth, and, coming under the philosophical influence of W. H. Lang, became with characteristic enthusiasm a keen student of developmental morphology and anatomy. His preoccupation was with the organism as a living entity, and his studies of cell wall structures were intended to em-

phasize the view that the composition of these structures reflects the growth activities of the cells that formed them. With his great practical gifts, it was natural that Priestley should also be interested in the practical bearing of his scientific work, and he devoted much time to subjects like the influence of electricity on field crops, the propagation of plants by cuttings (Master's Lecture to the Royal Horticultural Society, 1925) and, finally, spiral grain in timber. His later work focused attention particularly on the properties of growing cells and tissues, on development in monocotyledons and on cambial activity in trees. The purpose of his work was to show that the form and structure of an organ reflects the "organisation of growth" in the tissue which formed it.

No doubt views will differ on the question of whether Priestley's success as a teacher was greater or less than that as an investigator. He was certainly a born teacher and the impact on his students of his powerful and vigorous personality was tremendous. Those who were going to teach science must have profited enormously by acquaintance with his methods, which always focused attention upon the fundamentals of the subject under review. The gift for seizing the main point at issue was certainly an outstanding feature of Priestley's character and it ran through all his work, administrative, educational and scientific. Combined as it was with never-failing courage, boyish enthusiasm and outstanding vigour, it made him sometimes didactic, often provocative, always interesting and, as a whole, one of the most colourful persons in biology.

W. H. PEARSALL.

In the death of Prof. J. H. Priestley the botanical world and the Department of Botany of the University of Leeds have lost a man of originality and genius. Though cut off from fulfilling the period of university service to the usual age of retirement, his life has been a full one, and the record of his achievements is one of which any man might be proud.

As an undergraduate at Bristol, though primarily a student of botany, Priestley also attended the honours courses in chemistry and physics, a training which gave him an exceptionally sound basis upon which to found his botanical studies. At the close of his studentship, at the early age of twenty-two, his gift for leadership was recognized and he was deemed worthy to take charge of the Department of Botany in University College, Bristol. Coming into botanical science at a time when many botanists had been absorbed in confirming and amplifying the great discoveries of the late nineteenth century, he brought to botany an alert mind and a fresh outlook, which undoubtedly owed much to his sound knowledge of the pure sciences. One of his first lines of investigation was an attempt to ascertain the first product of photosynthesis, but later his interests turned more and more towards developmental and causal studies; in this new line of attack on plant problems he often turned for advice and encouragement to Prof. W. H. Lang, of Manchester, of whose work and judgment he held a very high opinion. The results of his studies along these original lines, with the complementary teleological work of Haberlandt and his school, gave to botany a much more satisfying understanding of many plant structures. His last and most outstanding phase of research dealt with problems of tree growth; he was much absorbed in the dynamic problems of

cambial activity and vessel differentiation, and his connexion with the Forestry Commission gave him opportunities to apply his knowledge to problems of afforestation.

Priestley had an exceptional knowledge of the literature and a memory for recorded detail with a capacity to fit together such scattered pieces to give a picture of his problem as a whole, where each detail fell into its right place and assumed its right value. He was himself often the first to admit that suggested interpretations of certain new lines of investigation had found their way into print prematurely, but even in such cases the interest aroused stimulated such vigorous work on the subject in question, to prove or disprove his theories, that botanical science had much to gain. The recorded facts upon which his theories were based were always sound.

Throughout his long service to science, perhaps his outstanding merits, which will long outlive him in the work of his students, have been the inspiration for research, the importance he placed upon true recording of facts and soundly based and courageous attempts to interpret them. In his teaching he maintained a freshness of outlook by the continual introduction of new methods and facts, which, from his great fund of knowledge, he selected to illumine aspects of subjects which students previously thought they had fully assimilated.

L. I. SCOTT.

R. D. PRESTON.

Dr. Thomas Swinden

THE death of Dr. Thomas Swinden on October 27 at the age of only fifty-eight has deprived the steel industry of one of its ablest leaders, who during the past year had been playing an important part in the reorganization of research in iron and steel, and whose further help in that field would have been invaluable.

Dr. Swinden was born in Sheffield on August 15, 1886, and studied in the University of that city, being Mappin Medallist in 1905. During 1906-8 he held an 1851 Exhibition Scholarship, studying metallurgy at Stockholm and Uppsala. During 1909-13 he worked as a Carnegie Research Scholar, and was awarded the Carnegie Gold Medal. In 1913 he also obtained the degree of D.Met.

From 1909 Dr. Swinden was chief metallurgist to Samuel Fox and Co. of Stockbridge, and was later works manager and director, but in 1932 he took up the important post of director of research in the United Steel Companies, Ltd., of which Samuel Fox had become an associate company. In this capacity he built up a remarkable research organization, with an able staff and well-equipped laboratories. Many valuable contributions have been made from this centre, both to metallurgy proper and to the study of refractory materials.

Besides controlling and guiding the research work of a large industrial concern and directing its application in practice, Dr. Swinden interested himself from the beginning in co-operative research for the whole of the iron and steel industry, and was one of the most active members of the committees and sub-committees set up jointly by the Iron and Steel Institute and the Iron and Steel Federation. Within the last few months he had assumed the chairmanship of several of these in succession to the late Dr. W. H. Hatfield, and he was an indefatigable worker for those committees. As a member of the Council of the British Iron and Steel Research Association

which has recently been formed to take control of this work, he would have had many responsibilities in this field. During the War he took a leading part in the work of the Technical Advisory Committee on Alloy Steels, and was a member of the metallurgical mission to the United States in 1943, which imposed a considerable strain on those who took part in it.

Swinden's early papers dealt with the constitution and properties of the tungsten and molybdenum steels, and came at a time when there was very little information on such complex alloy systems. Later, he was responsible for much of the progress made in the production and use of steels with controlled grain size, and in recent years he and his collaborators did excellent work on the relations between carbon, oxygen and nitrogen in steel, making many improvements in the methods for estimating those elements, and making a special study of the low-carbon steels of the 'rimming' type.

Swinden was the most pleasant and courteous of colleagues. Very modest himself, he always gave full credit to his fellow-workers in his published work. His judgment on any disputed point was invariably trusted, on account of his wide practical experience and sound scientific knowledge. He was a faithful member of the Iron and Steel Institute, of which he had recently become a vice-president. He had received its Bessemer Gold Medal in 1941, as well as medals from the North East Coast Institution of Engineers and Shipbuilders and the Institution of Marine Engineers.

Always a hard worker, Dr. Swinden was found to be suffering from overstrain in the spring of this year and was compelled to take a rest. He had, however, apparently made a good recovery and had resumed much of his work, so his sudden death came as a shock. He had a happy married life, and leaves a widow and two sons to mourn his loss.

C. H. DESCH.

Dr. Paul Ostern

DR. PAUL OSTERN was killed by the Nazis in Lwow at the beginning of July 1941, during a pogrom in which several men of science, scholars, physicians and others died. Ostern is well known to biochemists all over the world: although young, he made brilliant contributions to biochemistry. Born in Zloczow in 1902, he studied medicine in Lwow, and joined my staff in 1927. Ostern was especially gifted for chemical work. Though he received no special chemical training, except in my biochemical laboratory, he was able to cope with the most difficult chemical investigations. It was he who succeeded in obtaining on a large scale not only inosinic acid from muscle but also adenylic acid: during the nineteen-thirties every laboratory which was using adenylic acid for research purposes acquired it, directly or indirectly, from the Laokoon factory in Lwow, where Ostern was collaborating, and where the preparation of adenylic acid from fresh meat was under his supervision. Only in 1937 this changed, when Ostern made his brilliant discovery of enzymatic synthesis of adenylic acid from adenosin and phosphate, the method now generally employed for the production of adenylic acid—also for therapeutic purposes.

After his first research work concerning the formation of ammonia in the heart and the transformations of adenylic acid in this tissue, Ostern spent some time abroad, where his work with Krebs in Freiburg