

1939), the *New Phytologist* (1941, 1944) and the *Journal of the Royal Microscopical Society* (1944). These include detailed descriptions of *Pteromonas varians*, *Cycloneuxis erinus* and *Chlororhabdion diogenes* (all new species) and a revision of the genus *Harpochytrium*. They are a tribute to his excellent microscopy and meticulous technique and brought him the award of a D.Sc. in 1944. Although recently he had little time for active research on algae, his interest in it remained. There was generally at least one research student in the Department of Botany at Royal Holloway College working on an algal topic under his supervision, most recently in relation to the growth of algae in reservoirs. This led to a grant from the Department of Scientific and Industrial Research to promote such research and a close connexion with the Metropolitan Water Board.

From 1949, when he was appointed to the chair of botany at Royal Holloway College (University of London), much of his time and energy went on administration and in work on timber and trees. His book, *The Structure of Wood*, published by Black in 1955 and which he had almost finished revising, is the most authoritative treatment of the subject. It is used not only by academic students but also by students of timber technology. Indeed, he was one of the country's leading authorities on trees. Coupled with his fair-mindedness and impartial judgment this gave him the standing of an expert in lawsuits involving trees and timber and brought him much advisory work on tree management in estates and towns. He had a close connexion with the Institute of Wood Science and the Timber Research and Development Association.

The Botanical Supply Unit of the University of London, started in 1950 at Englefield Green, owes a great deal to his vision and drive. Under his wise chairmanship it has expanded from three to twenty acres and is now a Botanic Garden in which he will long be remembered and one of which the University may justly feel proud.

It was as a naturalist, ornithologist and photographer that Jane spent any leisure he allowed himself, and to his students and colleagues he was a delightful and inspiring companion on any field excursion. It is characteristic of him that here too he made himself an expert. Among other things, he served on the Field Studies Council, had been president of the School Nature Union and the Essex Field Club and was chairman of the local Committee of management of Blakeney Point for the National Trust. In the new booklet of Blakeney and Scolt Head, about to be issued, he was responsible for the sections on Birds, Flowering Plants and Ecology. He was a perfectionist in his photography and used his own coloured slides to illustrate the many stimulating talks he gave to biological and natural history societies throughout the country.

From the age of fifteen, when he left school, he had to work to earn his academic education and he took his degree as a part-time student at Birkbeck College. It was perhaps the memory of these early days that made him so sympathetic to anyone who wanted to learn and gave him such a practical interest in education at all levels. As chief examiner and later moderator in the advanced level of the General Certificate of Education in botany he was able to influence the teaching of botany and biology in schools. He was similarly involved in biological education at training colleges and was particularly interested in the problems raised by the expansion of their course from two to three years. He did invaluable work in planning the training of science laboratory technicians, among whom he numbered some of his personal friends. He was a vice-president and former president of the Institute of Science Technology as well as chairman of the University of London Committee on the Training of Technicians. Unlike some professors, he was always ready to encourage and supervise part-time research students. He will be remembered in Africa particularly for his services to the Departments of Botany of those overseas colleges in

special relation with the University of London to which he paid many visits and gave much advice. Their appreciation is summed up by one of them in a letter which says his loss will be felt in no fewer than six of the developing countries, and that it is perhaps symbolic that he should have died in Africa.

His untimely death at the age of sixty-two, at the height of his powers, will be mourned by the many people who have benefited from his help and encouragement. We extend our sympathy to his wife and daughter.

MARGARET A. P. MADGE

Dr. H. S. Holden, C.B.E.

AFTER graduating with honours in botany from the University of Manchester, H. S. Holden was appointed a lecturer and demonstrator in botany in University College, Nottingham, in 1909. At that time the College occupied buildings in Shakespeare Street. Even in those early days, Harry Holden was a stimulating personality. He initiated and directed vigorous research work in the Department. He was a gifted exponent and, looking back, it seems quite natural that he should have taken an active part in the Workers' Educational Association Extension courses run by and from the College.

He always had a deep interest in micro-organisms and during the First World War served as bacteriologist at the Plymouth Naval Hospital. On his return to University College, Nottingham, he took up his general teaching duties and the advancement of research work. His own particular interests lay in the field of plant anatomy and in microbiology, and this dual interest is reflected in the range of work on the anatomy of plants, on fungi, and on bacteria which came from the Department in subsequent years.

About 1921 he was awarded the degree of D.Sc. of the University of Manchester for work on seedling structure. In 1927 he was appointed senior lecturer in botany and head of the Sub-Department of Industrial Bacteriology. In the years preceding 1928 plans were made to build at Highfields a new University College, and Holden assumed much of the responsibility for the planning of the Department of Biology. On the retirement of Prof. Carr, Holden was appointed head of the Department of Biology in 1928. The growth of this Department in subsequent years and increases in the staff resulted in the re-alignment of Holden's duties, and in 1932 he became professor of botany and head of the Biology Department, and finally in 1934 professor of botany and head of the Botany Department.

His early anatomical studies led him to an interest in palaeobotany, particularly of Coal Measure plants, and he collaborated with Dr. D. H. Scott in a series of anatomical studies of fossil plants. He was responsible for the purchase by the University College of the D. H. Scott collection of reprints, which consists of a wide range of pamphlets dealing with all branches of botany.

Holden was a man of great enthusiasm, blessed with an enquiring mind which led him into paths not at that time recognized as the precincts of botanists or biologists. Thus, he was consulted on various occasions by local police authorities in connexion with cases of water pollution. His wide knowledge of microscopy and of plant structure, even in its most minute details, led quite naturally it seems now to the development of applied microscopy and of scientific methods in the solution of crime. His early teaching experience in Nottingham was in the old College in Shakespeare Street. This may have been a portent of the future, because when the East Midland Forensic Science Laboratory was established in 1936 he became its first director. This Laboratory finally occupied well-planned and well-equipped premises in Shakespeare Street, not far from the old College. I believe this Laboratory was the first of its kind in the country, and it is not surprising that some ten years

after he entered the Forensic Science Service, Holden became director of the Metropolitan Police Laboratory at New Scotland Yard.

Because of his interest in micro-organisms, it was perhaps natural that even when he became director of the Forensic Science Laboratories in Nottingham he still maintained contacts with industrial firms in the neighbourhood, and with the discovery of the importance of penicillin in the early years of the War he was instrumental in bringing together in a Nottingham laboratory a very considerable collection of cultures of species of *Penicillium*.

I have vivid recollections of my first meeting with Harry Holden in the Department of Botany, University of Glasgow, round about 1923. On that day he was sitting in the assistants' room inking in drawings of a fossil stem from the Kidston collection. I was captivated by the sureness of his draftsmanship, and by the speed with which he worked. He kept up a running fire of commentary during the whole of the period, and I had a

foretaste then of what has remained with me as an abiding memory of Dr. Holden, his immense vitality and deep interest in botany, and his rare genius for communicating with anyone his unbounded enthusiasm. He was a man who could not tolerate inactivity and slackness and who spent his energies in the service of biology, particularly of botany, without stint. He was gifted with considerable organizing ability, and was quick to see and to seize advantages in situations as they presented themselves.

There can be no doubt that Holden exemplified scientific versatility to an amazing degree. His success in the forensic science field bears witness to this, but after a long and active career in this service it gave pleasure to many of his friends that he returned to his palaeobotany studies in the last few years of his life, and brought to these the same enthusiasm and vigour which so marked him in his days in the Department of Botany, University College, Nottingham.

C. G. C. CHESTERS

NEWS and VIEWS

Biochemistry at Sheffield: Prof. W. Bartley

DR. W. BARTLEY, who has been appointed to succeed Prof. Quentin H. Gibson in the chair of biochemistry at the University of Sheffield (see *Nature*, 198, 939; 1963), returns to the University where he graduated in 1950 with first-class honours in physiology. In the same year he joined the Cell Metabolism Research Unit of the Medical Research Council in the Department of Biochemistry at Sheffield, and in 1954, on the appointment of the director of the Unit, Prof. H. A. (now Sir Hans) Krebs, to the Whitley professorship of biochemistry at Oxford, he moved with the Unit to the Biochemistry Department at Oxford. In 1959 he transferred to the staff of the Oxford Biochemistry Department as a University demonstrator. His main research interests concern the biochemistry of mitochondria, a field in which he has made important contributions distinguished by careful and systematic experimentation. His interests include the elucidation of the part played by lipids in structure and function in living cells, and generally the relations between structure and biochemical function. He has built up a reputation as an enthusiastic undergraduate and post-graduate teacher who may confidently be expected to add to the distinguished record of the Biochemistry Department at Sheffield.

The 1963 Guggenheim International Astronautics Award: Prof. M. Nicolet

PROF. MARCEL NICOLET, director of the Centre National de Recherches de l'Espace in Belgium, has been awarded the 1963 Daniel and Florence Guggenheim International Astronautics Award. The Award, which carries with it a prize of 1,000 dollars, is offered annually to an individual who has made outstanding contributions to the progress of astronautics during the preceding five years. Prof. Nicolet is well known for his achievements in the fields of aeronomy and planetary atmospheres. He was the first to point out correctly the effect of sunlight and diffusion in modifying the composition of the upper atmospheres of Earth and planets. This work enabled him to predict in the planetary upper-atmospheres the existence of a helium belt which was later shown by space probes to be correct. He was awarded the Triennial Prize of the Agathon De Potter Foundation of the Belgian Royal Academy of Sciences and became a member of the Academy in 1962. For seven years he was secretary-general of the Special Committee of the International Geophysical Year.

The Nuclear Science and Engineering Corporation, Pittsburgh, Pa.

Mr. Francis S. McMichael and Mr. Frank G. Chambers have been elected to the Board of Directors of the Nuclear Science and Engineering Corporation.

F. S. McMichael

Mr. Francis S. McMichael is a vice-president of Mellon National Bank and Trust Co. He is a director of the Jeannette Glass Co., the Keystone Box Co., South Hills Ornamental Iron Co., Division of Mulach Steel Corporation and the Pryce Machine and Manufacturing Co. He is also a member of the Allegheny County Bar Association, the American Society of Planning Officials, the Pennsylvania Planning Association and the Mt. Lebanon Planning Commission.

F. G. Chambers

Mr. Frank G. Chambers is president and a director of the Continental Capital Corporation, a small business investment corporation in San Francisco. He is chairman of the Board of Hazleton-Nuclear Science Corporation, the western affiliate of the Nuclear Science and Engineering Corporation. He is also a director of Maydwell and Hartzell, Guardian Paper Co., Kimball Manufacturing Co. and the *Journal of Commercial Art*. He served as director of the Office of Priorities and Controls, Munitions Board of the U.S. Defense Department.

The Nuclear Science and Engineering Corporation was formed in Pittsburgh, Pa., immediately after passage of the Atomic Energy Act of 1954. It conducts research and development, utilizing nuclear and radioactive tracer techniques on production and research problems of industry and Government. It also provides specialized radioactivity and radiation measurement services, and is considered a leading producer of radioactive isotopes. The four technical departments of the firm include physical sciences, biomedical isotope applications, radiation biology and radioactive materials.

The Royal Society and Nuffield Foundation Commonwealth Bursaries Scheme: Awards

AWARDS under the Royal Society and Nuffield Foundation Commonwealth Bursaries Scheme have been made as follows: Dr. M. Adhikari, lecturer in applied chemistry, University of Calcutta, to enable him to work on physico-chemical properties of clays and clay membranes at the Imperial College of Science and Technology, London, from July to December 1963; Dr. A. K. Chandra, lec-