OBITUARIES

Dr. J. Unrau

ON March 2, 1961, with tragic suddenness, the death of Dr. John Unrau took one of Canada's outstanding geneticists and brought to an end a distinguished career of scientific accomplishment and leadership. Dr. Unrau's death, at the peak of his many challenging scientific activities, is mourned by his colleagues and friends in Canada and throughout the world.

John Unrau was born on January 24, 1916, at Karaguy, Orenburgski Territory, Russia. At the age of ten he moved with his family to Saskatchewan, where he obtained his early education in Mayfair and his high-school courses by correspondence. He entered the University of Saskatchewan and graduated with honours in field husbandry in 1942. In the same year he began graduate studies in genetics and plant breeding and obtained a Master degree in 1945. He then went on to Washington State University, where he undertook studies on wheat genetics under Dr. S. P. Swenson and the late Dr. Luther Smith, and received the Ph.D. degree in 1949.

In 1940, he married Mary Klassen of Mayfair. He is survived by his wife, a daughter, Mary Ann, and three sons, John, Paul and Phillip. John and Paul are students at the University of Alberta.

John Unrau's earliest research was in sunflower breeding at the Forage Crops Laboratory, Saskatoon. This study led to the development of the single-cross hybrid, 'Advance', still widely grown commercially. At Washington State University, he entered into the activities of the Department of Agronomy, and a start was made on his now well-recognized work on monosomic-nullisomic wheat. These studies of F_2 and F_3 crosses between common hexaploid wheats and Sears' chromosome-deficient series, in which he was able to associate specific genes with specific chromosomes, laid the foundation for his latter contributions to cereal genetics.

Dr. Unrau joined the staff of the University of Alberta in 1949 and became head of the Department of Plant Science in 1951. In addition to his intense research activity, he assumed a heavy teaching load and directed the research programmes of nineteen advanced graduates, many of whom have already achieved positions of responsibility and are now making significant contributions to the advancement of plant genetics in Canada. He gave much thought to, and took an active interest in, problems of university teaching and high standards of training. He participated in numerous university committees, and took an active part, as a member of the Prairie Regional Committee of the National Research Council of Canada, in the Associate Committee on Plant Breeding and the Sub-Committees of Common and Durum Wheats, Winter Wheat and Rye, and Cytogenetic Research on Cereals and Related Grasses. At the time of his death he was a member of the Honorary Advisory Council of the National Research Council of Canada and chairman of the Associate Committee on Radiation Biology.

The contributions John Unrau made to genetical research during his short professional career were numerous, leaving a lasting impact on geneticists, plant breeders and cereal cytologists alike. He was a

recognized world leader in the exploitation of wheat monosomics and their use in determining gene-effects and linkage-relationships. He demonstrated that substitution lines of whole chromosomes could be used effectively to study the expression and control of quantitative characters. By the development of reciprocal substitution lines he showed that two varieties with contrasting characters could be used in precise genetic studies of character differences. While at the University of Cambridge, during 1957-58, his work led to new evidence on the origin of the B genome in wheat. His work on rust-resistant, soft-white, spring wheat culminated in the licensing of the important commercial variety, 'Kenhi', in 1958.

The Genetics Society of Canada owes a very profound debt to John Unrau; to the present membership he will long be remembered. His initiative, persevering and vigorous leadership were of utmost importance in launching the Society. His wise counsel and active part in soliciting support was decisive in establishing the *Canadian Journal of Genetics and Cytology*. He was a charter member and past director of the Genetics Society of Canada. Successively as vice-president, president and past-president, the Society was indeed privileged to have his outstanding leadership until the time of his death.

John Unrau's research output of some twenty-six articles is an impressive testimony to his rather brief but intensely energetic period of scientific activity. His monument will be his published papers and the men he has trained to add to his personal contributions in genetics. The memory of his life will remain with his colleagues and fellow members of the Genetics Society of Canada as an inspiring example.

T. J. ARNASON
L. P. V. JOHNSON
W. J. WHITE
A. WILKES

Prof. B. J. Krijgsman

PROF. B. J. KRIJGSMA, who was head of the Sub-department of General Physiology at the University of Cape Town, died on April 17 at the age of sixty. At the time of his death he was also acting head of the Zoology Department. He had suffered from an incurable complaint of the lungs for some years, but such was his courage and strength of will that he rose above all adversity to remain an active scientist and teacher to within a week of his death. To the very end he maintained a deep humility and sense of responsibility towards his students and colleagues, always managing to find the time and energy to give friendly advice or offer gentle criticism. Though a prolific research worker, Prof. Krijgsman was a man of exceptionally wide interests. He was a great reader, particularly favouring philosophical topics, and was very interested in art. However, his main form of relaxation was listening to music or, when his health allowed, playing the piano, on which he was an accomplished performer. It was indeed a great privilege to know him socially as it was to work with him in the laboratory.

Prof. Krijgsman was born in Holland in 1901. After studying biology at the University of Utrecht, he became junior lecturer there in 1921, later being appointed lecturer. In 1928, after being awarded the degree of doctor of philosophy with distinction, he emigrated to Java to become head of the Veterinary Research Institute at Buitenzorg. He later combined this post with that of professor of medical zoology at Batavia. In 1935 he returned to Holland to study the physiological effects of insecticides for the Netherlands Council for Scientific and Industrial Research and to lecture at the University of Utrecht. In 1949 he accepted the post of senior lecturer in physiology, in the Zoology Department, University of Cape Town, later being appointed associate professor. At the beginning of 1959 he became the first head of the newly formed Sub-department of General Physiology.

In spite of heavy teaching duties, Prof. Krijgsman published at least one hundred and twelve original papers during his lifetime, wrote four books on zoology and contributed to six others. His wife, Mrs. Nel E. Krijgsman, was a great help to him in this respect, being not only a devoted companion but also undertaking duties as his research assistant. Prof. Krijgsman is, perhaps, best known for his studies on the physiology of the invertebrate heart and on the physiology of parasites, but, in fact, he pioneered research in many fields, and the whole subject of invertebrate physiology would have been the poorer had he turned his talents elsewhere. The world of science has lost an eminent research worker and an original thinker: the University of Cape Town has lost also a valued colleague and friend.

A. C. BROWN

Dr. E. de Barry Barnett

EDWARD DE BARRY BARNETT, who died on March 23, will be greatly missed by his many former colleagues and students. He could truly be described as a character. He was held in great affection but was often unpredictable. His instructions to his executors were definitely that he did not wish any obituary notice to be published, but he left a summary of his life among his papers, realizing, no doubt, that it would not be possible to avoid such notice and desiring, as always, to be of help.

He was born on October 20, 1886, and educated at Malvern College and University College, London, graduating with first-class honours in chemistry in 1908. After holding some industrial appointments in the dyestuff and explosives industries, he went back to academic work and was appointed lecturer in organic chemistry at the Sir John Cass Technical Institute in 1919; eventually he became head of the Department and deputy principal, retiring in 1947.

He was the author of a number of well-known books, the latest of which, *Mechanism of Organic Chemical Reactions*, was published in 1956.

His own summary of his life passes very lightly over much that was significant. It does not tell of the extent or the high quality of his published papers, numbering more than a hundred, chiefly in the field of anthracene chemistry. It does not indicate his rather lonely private life as a bachelor, isolated by his deafness in so many ways. It gives no idea of the extent of his help to his students. He had an uncanny knack of selecting as junior laboratory staff those applicants who had the ability to advance. Barnett

would teach them himself, at the same time often arranging and paying privately for other tuition to make good defects in their earlier education. Having got them over these hurdles, he would see that they lacked no help in gaining their degrees. There is no way of assessing the generous financial assistance that Barnett gave to so many students in days when grants from public funds were less common than they are now.

He was greatly handicapped by his deafness. His well-known "What?" with his hand cupped to his ear and his "You see what I mean to say", said in the loudest of tones, without any basis for uncertainty and not infrequently to the discomfort of those who overheard his criticism of them, remain as vivid memories. But at all these times, even when he criticized both his students and those in authority, there was a humorous twinkle in his eye and an underlying kindness in all he did.

Sir John Cass College was to him a life-time interest. He worked selflessly for its development throughout the whole of his teaching career. During the War, when much of the building was severely damaged by bombing and fire, he continued his teaching there, chiefly with classes at week-ends and by correspondence. He took more than his full share of fire-watching, spending his nights on the roof to make sure that his deafness did not cause him to miss any incidents that might have escaped his immediate attention had he been in a less-exposed position.

He is remembered by his many friends with a deep sense of loss and also with appreciation of the contribution he made not only to the advancement of chemistry but also to the development of the 'Cass'. His sincere care for the well-being and interests of his many students will not be forgotten. A. M. WARD

Mr. W. E. Lawrence

THE death on April 16 of Mr. W. E. Lawrence came as a great shock to his many friends and admirers who have, from time to time, received his help and been regaled with his varied experiences during his forty-three years of service in the Prosectorium of the Zoological Society of London.

William Edward Lawrence was born May 1, 1900, the son of a London milk-roundsman; his mother was Welsh, but "Billy", as he was affectionately known, was himself—both in physical appearance and temperament—a typical Cockney, with his ready wit, quick repartee, irrepressible sense of humour and rich fund of experiences.

Lawrence received an elementary school education at Princess Road School, Regent's Park (1904–14). Here he proved a good scholar, reaching the highest standard. Under the influence of his teacher, a Mr. Dakin, a Zoo addict, Lawrence's interests were early channelled towards animals and he made many visits with his teacher to the neighbouring Zoological Gardens. Apparently it was through Dakin's influence that "Billy" was recommended to the post in the Society's Gardens when, as was customary at that time, he left school at the age of fourteen.

He entered the 'dead house', as it was then called, as prosector's boy and was placed under the direction of the prosector's assistant, Mr. C. H. Hicks, from whom Billy learned dissection, injection and the preparation of skeletal material, albeit employed mainly on menial tasks until Hicks' promotion to superintendent's assistant in 1925, when Lawrence