

OBITUARIES

Dr. Oliver E. Buckley

DR. OLIVER E. BUCKLEY died on December 14. He will be remembered for many things in the science and technology of electricity. His early years were notable for researches on such diverse topics as the Hall effect, ionization manometers, magnetic materials and submarine cables. His later years were occupied with important government advisory committees and boards. In between came an outstanding but quietly accomplished achievement that will increase in stature as the years go by. This was his work in assuring that basic research will have a secure place in the industrial laboratories of the future. It was he who took over from Dr. F. B. Jewett, the first president of the Bell Telephone Laboratories, a group of scientists who had already given promise of what basic research could do for an industry. Dr. Buckley saw and appreciated this promise. It was he who protected this group from pressures to digress into development. It was he who made it into a recognized function of the Laboratories' activities. It was he who turned it over in mature form to his successor, Dr. Mervin J. Kelly, when he retired from the presidency of the Laboratories in 1951 and as chairman of the Board in 1952.

Dr. Buckley was born in Sloan, Iowa, in 1887. He received the B.S. degree from Grinnell College in 1909 and the Ph.D. from Cornell University in 1914. He immediately joined the Western Electric Company as a research physicist. He soon developed an ionization manometer which was an important tool in the early work on vacuum tubes. Taking an interest in new magnetic materials, he was quick to recognize possibilities in the use of permalloy to increase the speed of telegraph transmission on submarine cable. When permivar came along, he envisaged a submarine cable capable of transmitting human speech. This project was carried far enough to show that it was quite practical from a technical point of view. The economics of the times determined its fate. Dr. Buckley's interest never flagged, however. In 1932 he started a group working on a multichannel system employing repeaters powered at relatively low voltage with current sent through the cable itself. While this project was never completed in the original form, the work done on it was basic to the cables that now are in operation carrying many conversations across the Atlantic, to Alaska, to Hawaii and soon across the entire Pacific.

When the Western Electric Company's engineering department became Bell Telephone Laboratories in 1925, he was appointed assistant director of research. In 1933 he became director of research and in 1936 executive vice-president. He served as president from 1940 until 1951 and as chairman of the Board until he retired in 1952. During this time many technical advances were made. These included the wave-guide, the transistor, information theory and applications including plastic cable sheaths, automatic message accounting, nation-wide dialing, and micro-wave relay networks.

In the course of his career, Dr. Buckley received many honours and served on a number of important committees. He was a member of the General Advisory Committee of the Atomic Energy Com-

mission, 1948-54, was appointed by the President to be the first chairman of the Science Advisory Committee, and was a member of the National Inventors' Council. He received the Medal for Merit, the nation's highest civilian award, in recognition of his contribution during the Second World War. He was a Fellow of the American Physical Society, the American Association for the Advancement of Science, the Acoustical Society of America, the American Academy of Arts and Sciences, and the American Institute of Electrical Engineers, of which he was vice-president during 1946-48. He was a member of the U.S. National Academy of Sciences, the New York Academy of Sciences, the Franklin Institute, and the American Philosophical Society, of which he served as vice-president in 1954-55.

In the face of these and other achievements, honours and activities, Dr. Buckley retained his characteristic friendly enthusiasm and love for people. He knew a great many of them, and knew how to work with them. To-day, more and more, we see industrial laboratories engaged in basic research. A large share in promoting this belongs to Dr. Buckley. By example in his own laboratories, by logic and inspiring discussion on boards and in committee meetings, and by personal contacts he made people see the need for this type of research and the harvests to be reaped from its cultivation. He has sowed well. The reaping will increase with the years.

F. B. LLEWELLYN

Captain Guy Gardner

HAD he lived a little longer, Captain Guy Gardner's name would have been better known to archaeologists in Great Britain than can be the case before the important record, in book form, of his prolonged excavations at the great proto-historic site of Mapungubwe in the Transvaal is available. His death in Johannesburg on Christmas Eve, aged seventy-eight, emphasizes the evils of over-delay in publication, in this case beyond the author's control. For the work was done in six consecutive seasons between 1935 and 1940, and written up during and after the ensuing war years. Its speedy publication is surely now a duty imposed on academic bodies in the Union of South Africa with or without a Government subvention.

Gardner was not a professional archaeologist, and, indeed, had his first taste of field-work with me in the Faiyum in 1927-28. But though farming in Natal had been his livelihood ever since he settled in South Africa as a young man, he had loved history and archaeology, particularly classical, all his life; and in the Graeco-Roman remains of my Faiyum concession he rejoiced in his introduction to the reality of the beloved. "The Desert Fayum", Chapter 31, contains his unaided report, illustrated by plans and by drawings of pottery which at the time were the first substantial groups known securely dated to the reign of Ptolemy II.

A more ambitious opportunity followed. The now-famous kopje site of Mapungubwe Hill, accidentally discovered in 1932, had been partially dug by the late Neville Jones and J. F. Schofield in 1934; it had disclosed an iron-age Bantu culture, rich in gold

ornament, yet the work of predominantly non-negroid people. This presented unresolved archaeological difficulties of interpretation and date manifest in the ensuing publication, "Mapungubwe: Ancient Bantu Civilization on the Limpopo".

Continued research was obviously imperative. General Smuts in a London meeting urged my acceptance of the task; but my reply was to the effect that, on Zimbabwe experience, I preferred passionless archaeology. South Africa, I felt, should be encouraged to produce its own excavators. The choice fell on Guy Gardner, who devoted unreservedly his time and energies to six seasons of arduous work, with only occasional European help. Were it not for his letters home, and for his published presidential address to the South African Archaeological Society in 1958, and articles in the *South African Archaeological Bulletin*, little would be known of his results or his opinions upon them; and even so, obscurities abound for lack of detail. In bare outline we know

of his examination of cemeteries and deeply piled middens at the foot of a kopje named Bambandyanalo adjacent to Mapungubwe Hill. The culture, characterized by fine pottery and unusual burial ceremonials, is not that of Jones's and Schofield's people on Mapungubwe, though both populations fall into the Boskopoid-Bush category of South African anatomists, which Gardner terms 'Proto-Hottentot'. His excavations, when published, will have the great advantage over the earlier ones in that carbon-14 samples will introduce fixed dates (within their own wide margins of uncertainty) both for the 'gold users' of the Hill and for the less opulent but more interesting people of Bambandyanalo, who may be at least a thousand years old.

Guy Gardner's meticulous methods of excavation and record, graphic as well as verbal, are a guarantee that a mine of hitherto unknown information awaits impatient readers of his *magnum opus* to be.

G. CATON THOMPSON

NEWS and VIEWS

Physiology at Bedford College, London:

Prof. Margaret Murray

THE retirement of Prof. Margaret Murray from the chair of physiology at Bedford College prematurely because of ill-health is a great misfortune to many. She has been associated with Bedford College for forty-two years, as a student when she gained first-class honours in physiology and as demonstrator and as lecturer in biochemistry until in 1947 when she became professor and head of the Department. More than anyone else she has been responsible for the steady progress of physiology for science students in London, and the University owes her much for her services. She has been not only a member of the Boards of Studies in Physiology, and of Biochemistry, but also served on the Board of the Faculty of Science and on innumerable special committees, to which she always gave most conscientious attention. She was chairman of the Special Advisory Board on Dietetics, Nutrition and Household Service for many years and was a member of the Committees of the Medical Research Council on Dental Diseases and on Goitre. She has been a member of the Committees of the Physiological and Biochemical Societies and on the Editorial Board of the *Journal of Physiology*. Her opinions, if sometimes dogmatic, were clear, unafraid, to the point and always respected. Prof. Murray has a wide field of interest on the biochemical side of physiology. Her researches have earned her a high reputation in the scientific world, for her painstaking accuracy is known to all. Her intercollegiate classes on "Blood" were a model of what such classes should be, involving as they did an enormous amount of preparation. In later years she has taken a special interest in the prevention of dental decay by fluorine and its possible hazards, and in the prevention of goitre in hot countries by the use of sodium iodate. In 1937 she was awarded the D.Sc. of the University and now she has been granted the title of professor emeritus.

Prof. W. F. Widdas

DR. W. F. WIDDAS, reader in physiology in King's College, London, has been appointed to succeed Prof.

Murray. He qualified in medicine in Durham in 1938 and after a short time in practice volunteered for the Royal Army Medical Corps. He served with the British Expeditionary Force until Dunkirk and later held staff appointments at Northern Command and at the War Office with the rank of major. In 1947 he joined the staff of Prof. A. St. G. J. Mc. Huggett at St. Mary's Hospital Medical School, where he worked with a team on foetal physiology and rapidly became senior lecturer. Dr. Widdas's special interest has been the physico-chemical aspect of physiology, with special reference to the transfer of substances across animal membranes, and he has made notable contributions in this field. He was awarded the Ph.D. (London) in 1953 for a study of the kinetics of glucose transfer into the red cells of adult and foetal animals, and in 1958 the D.Sc. for his further researches. In 1955 he moved to King's College, where he became reader in 1956. There he has not only been a very active teacher of large classes of medical and science students but has also conducted a very popular intercollegiate course in cell permeability for the B.Sc. (special). He has continued his studies on the red cell and by a most novel method extended his work to cardiac muscle, which he has shown loses water during contraction. It is of interest that Dr. Widdas is the twelfth member of the staff of the Department of Physiology of King's College to become a professor in recent years.

Scientific Department of the National Gallery:

Mr. F. I. G. Rawlins, C.B.E.

MR. F. I. G. RAWLINS, scientific adviser and deputy keeper at the National Gallery, will retire at the end of March after twenty-five years service. After graduating at Cambridge (Trinity College) and research at the University of Marburg, he held a number of posts at Cambridge where he was also engaged in research in infra-red spectroscopy. He was the first vice-president and secretary-general of the International Institute for the Conservation of Museum Objects, and is technical director of the Central Council for the Care of Churches and a member of the Cathedrals Advisory Committee. He was