

on elasticity; as an instrument maker he made improvements in thermometers, barometers, air pumps and microscopes, and he devised sounding apparatus for sailors and calculating machines. He was the first to describe the cellular structure of plants and the first to suggest the use that might be made of fossils in revealing the history of the earth. He had advanced views on gravity, colours and light, respiration, combustion and the nature of heat. His "Micrographia", published when he was thirty years of age, was the first major treatise on the microscope and microscopy. His "Attempt to prove the motion of the Earth" was published in 1674; his "Description of Helioscopes" in 1676; his "Cometa" in 1679. Many of his lectures and writings, however, were only published after his death. They are all full of pregnant suggestions, and as Dr. Singer says: "No Englishman of science has outlined so many and so variously important discoveries".

It was the Great Fire of London in 1666 which led Hooke to become an architect. While the ruins of the city were still smouldering, he produced a plan for rebuilding it. Although his plan was approved by the Royal Society, it was not adopted; but on October 4, 1666, the City made him one of its surveyors. Henceforth much of his time was taken up in attending committees, superintending the rebuilding of houses and designing structures such as the Bethlehem Hospital, Moorfields, Montagu House, which stood on a site now covered by the British Museum, the Merchant Taylors' Hall, and numerous churches and private residences. It was from this work that he accumulated the large sum of money which he intended to bequeath for the purpose of erecting a library, repository and laboratory for the Royal Society, a project which, however, came to nothing owing to his failure to make a will.

"There is a peculiar fascination," said Lord Oxford, "in trying to pierce through the gloom which veils the life-history of some of the most famous of our race." In endeavouring to do this in the case of Hooke, the newly-published "Diary" will be of the greatest interest. Hitherto opinion has been largely influenced by the remark of his biographer, Richard Waller, who said that "his temper was melancholy, mistrustful and jealous, which more increased upon him with his years". Always somewhat of a valetudinarian, Hooke had his share of troubles, and the picture of him as a lonely old bachelor in his somewhat neglected apartments in Gresham's decaying mansion in Bishopsgate Street no doubt is a true one. But in the "Diary" he is seen as a man of forty, mixing freely with his fellows, meeting at many coffee-houses and taverns, discussing a hundred different matters. His friend John Aubrey, the antiquarian, writing about this time, said of him: "He is of middling stature, somewhat crooked, pale faced; and his face but little belowe, but his head is large; his eie is full and popping, and not quick; a grey eie. He has a delicate head of haire, browne, and of an excellent moist curl. He is and ever was very temperate and moderate in dyet, etc. As he is of prodigious inventive head so he is a person of great vertue and goodness."

There is, unfortunately, no portrait of Hooke. Neither is there any monument to him. He died in Gresham College on March 3, 1703, and a day or two later, in the presence of the fellows of the Royal Society, was carried across Bishopsgate Street to St. Helen's and there laid to rest in the chancel. The exact site of his grave is not known, but at the west end of the Nun's Choir of the church is a window of five lights to ten Worthies of St. Helen's, among the names of whom is that of Robert Hooke.

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## Obituary

Prof. Alice Werner, C.B.E.

WE regret to record the death, which took place at Welwyn Garden City on June 9 at the age of seventy-five years, of Prof. Alice Werner, emeritus professor of Swahili and Bantu languages in the University of London.

If the study of questions relating to the African in Great Britain has been determined largely by the influence of Mary Kingsley, the study of the Bantu languages and mentality as an academic subject owes no less to Prof. Werner. She was born at Trieste on June 26, 1859, and educated at Newnham College. An unusual gift for languages and an

absorbing interest in certain aspects of the mentality of the less-sophisticated peoples drew her to Africa. From 1893 onward, she lived there for some time at first with the Scottish Mission at Blantyre in Nyasaland, and afterwards in South Africa, where she was deeply influenced during her study of the Zulu language and people by the Misses Colenso, the daughters of the famous Bishop of Natal, and laid the foundation for that sympathetic understanding of the Bantu peoples which was such an outstanding feature in her academic and literary work. A second visit to Africa took place in 1911, when she spent two years as Mary Ewart travelling scholar of

Newnham College in visiting various peoples in East Africa. On her return in 1913 she was made a research fellow of her college.

Miss Werner's most important services to African scholarship date from 1899, when she opened a school for the study of African languages in Westminster, which was afterwards transferred to King's College and recognised by the University of London, while Miss Werner became successively lecturer, reader and professor. On the opening of the School of Oriental Studies of the University of London in 1917 she was appointed lecturer in Swahili and Bantu, and the position these studies now hold in the School is due to her enthusiasm and untiring energy.

In 1930, Miss Werner became emeritus professor, after receiving the degree of D.Litt. in 1928. In 1931 she was awarded the Silver Medal of the African

Society, of which she was a vice-president at the time of her death, and in the same year was made a C.B.E.

Miss Werner was the author of a number of works dealing with African languages and folklore, among the best-known being "African Mythology" (1926) and the scholarly and at the same time delightful "Myths and Legends of the Bantu" (1933), while "The Structure and Relationship of the African Languages" (1930) sums up the results of many years study of material gathered at first-hand as well as critical examination of the work of other scholars. Miss Werner was a constant contributor to the periodicals of learned societies and the reviews. She wrote with a light touch which was derived from a thorough mastery of a wide range of knowledge; and, if an exacting critic, she was ever kindly, and her criticism constructive.

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## News and Views

### Cultural Succession in the South African Stone Age

A PRELIMINARY report by Prof. C. van Riet Lowe on a discovery of faunal remains and stone implements of early man in the diamondiferous gravels of the Vaal River (see p. 53) is the first account in any detail to reach Great Britain of a firmly established archaeological succession in the early stone age cultures of South Africa, which, it is safe to predict, will be a standard of reference in future research. From the evidence of five sites on the Riverview Estates, a diagrammatic section of stratification has been constructed which shows a regular chronological succession of cultures in the Lower, Middle and Later Stone Ages from 'Chellean' to 'Capsio-Aurignacian'. Points of special significance emerging are the identification of the much discussed so-called Victoria West industry, with its gigantic stone cores, as the factory *débris* of the Upper Stellenbosch of Lower Palaeolithic age; the occupation by man of the Vaal River Valley both during and after the deposition of the old river gravel—the full significance of this will appear on publication of the palaeontological evidence; the confirmation of the chronological relation of Upper Stellenbosch and Fauresmith cultures, the latter being shown by stratigraphic evidence to be of much later age; and the local specialisation in South African cultures and technique, which renders inept the application of a West European terminology. While the author refrains from broader inference, pending the opinion of experts on geological, climatological and palaeontological evidence in a report now in preparation, the conclusion is warranted that this discovery will have more than local significance, especially as a contribution to the study of the great hand-axe culture, characteristic of Africa, but of highly specialised technique in South Africa, and distributed from Great Britain to India and even beyond.

### Presentation of the Albert Medal to Sir Robert Hadfield

H.R.H. THE DUKE OF CONNAUGHT, president of the Royal Society of Arts, presented the Society's Albert Medal for 1935 to Sir Robert Hadfield on July 8 "for his Researches in Metallurgy and his Services to the Steel Industry". In making the presentation the Duke of Connaught said: "It gives me very particular pleasure on this occasion to present the Albert Medal of the Royal Society of Arts, a very high honour, which was founded in memory of my father, to one who has been a personal friend and a charming next door neighbour of mine in the south of France for many years. Your labours in the application of scientific research to the great steel industry have contributed greatly to its progress. As far back as 1882, by the discovery of manganese steel, you opened a new chapter in the history of metallurgy, and this remarkable alloy, which has found many uses in engineering and in mining, has also stimulated research into the causes of its unique hardness, and into the structure of the alloys of iron. As an industrialist, you have given great encouragement to scientific research in metallurgy by your example, and you have consistently upheld the view that the future of industry in this country is closely bound up with the attention which it gives to research". Sir Robert Hadfield, in accepting the Medal, expressed his gratification at the honour conferred on him by the Society and reaffirmed his faith in the value of research. Speaking in particular of metallurgy, he referred to the fact that among the previous recipients of the Medal were Bessemer and Siemens. For himself, he said that during his life he had done his utmost along with many others "to raise metallurgy from an empirical art to a true and important branch of modern science. I venture to add without fear of contradiction that the study and practice of metallurgy is no longer empirical but