

peace and quiet, and to act with British Government backing, as goodwill representatives from the Anglo-Saxon civilization of the Old World to that of the New. Prof. H. S. Taylor and Prof. O. Veblen of Princeton were especially prominent in proposing some such scheme. It remains to be seen whether anything will come of it. At the same time it should also be mentioned that American sympathy for the British cause is so great that if at some later date owing to destruction of laboratories by bombing it should be necessary to evacuate a good many British men of science to the New World, nothing could exceed the welcome they would receive from their American colleagues.

It will be generally admitted that the part which the United States is playing and will play in this War will (with that of the U.S.S.R.) go far in deciding the future of the world. Only by drawing on American arms production can we hope to put an end to the activities of Europe's newest and worst tyranny. Hence the extreme importance of Anglo-American relations. Unfortunately, it is not in accordance with the facts to assume that the enemy is not extremely active in putting his case,

such as it is, in the United States. Although Nazism is genuinely unpopular there, there are many arguments of a fifth-column nature which are sedulously put about by Nazi agents (for example, that the Union of Europe is being achieved, and that the people are glad to have it so, if Britain would only cease her opposition) and British activity in countering this and presenting the true facts in America is on a ridiculously small scale. No one more than the Americans themselves would like to see a very great extension of our information services in the United States. But whatever is to be done should be done quickly, for the enemy never lets grass grow under his feet; and now that the isolationist-supported presidential candidate has been defeated, the enemy's efforts will be redoubled.

It would not be too much to say that upon Anglo-American, no less than upon Anglo-Soviet, relations hangs the outcome of the present conflict; and Anglo-American contacts of scientific men, with their closely joined traditions, and their common detestation of the Nazi menace to international science, are calculated most happily to improve them.

## OBITUARIES

Dr. F. W. Edwards, F.R.S.

**F**REDERICK WALLACE EDWARDS was born at Fletton, Peterborough, on November 28, 1888. His unexpected death, following a comparatively short illness, occurred in November 15.

From the Cambridge County School, where Edwards had already displayed a marked attraction to both botany and zoology, he entered Christ's College, Cambridge, in 1906, and commenced reading for the Natural Science Tripos under Sir Arthur (then Dr.) Shipley. He graduated in 1909, was admitted the degrees of M.A. in 1925 and Sc.D. in 1931. For many years a fellow of the Royal Entomological Society of London and an honorary or corresponding member of numerous scientific bodies, he was elected a fellow of the Royal Society in 1938.

In 1910, Edwards joined the staff of the Department of Zoology in the British Museum, being appointed Assistant in the Entomological Section, thus realizing an ambition he had cherished from childhood; in 1937 he was promoted to be a deputy keeper of the Department of Entomology which had been created in the interval. He was given charge of the mosquitoes, the crane-flies, and the British collection. His industry and ability quickly won him a larger share of responsibility, and he extended his care to the whole of the Nematoceros Diptera. The selection of Edwards for this post was a peculiarly fortunate one. It was intended to carry on and extend the work of F. V. Theobald, the last volume of whose

Catalogue of Mosquitoes (inspired by the work of Manson and Ross and the needs of tropical medicine) had appeared only a few months earlier, and it succeeded beyond all expectations.

Almost immediately Edwards flung himself wholeheartedly into the task, and from the very first his papers showed a mastery of his subject and a critical faculty scarcely to be expected so soon; within two years he had already published ten valuable contributions on the systematics of the Culicidæ of Africa, the Oriental region and Great Britain, including much needed synopses of all the known African species and their larvæ. Inevitably the African fauna made the most insistent calls upon his attention, and a long series of papers published in the *Bulletin of Entomological Research* kept both entomological and medical men in that continent abreast of the taxonomy of the family, the whole subject being brought comprehensively up to date in the last volume of the "African Mosquitoes" (published by the Trustees of the British Museum (Natural History)) now in the press. It was Edwards' one anxiety when taken ill that this volume should be complete, and it will prove a fitting coping-stone to his labours in this sphere.

It would be wrong, however, to assume that Edwards confined himself in the main, or even at all, to this important family of Diptera. Though the acknowledged master of them, he sometimes confessed that he was rather tired of them and their



'importance' and preferred other groups less insistent in their claims but more attractive in their purely scientific appeal, such as the fungus-gnats (Mycetophilidæ), crane-flies (Tipulidæ), the Blepharoceridæ, the remarkable larvæ of which cling to stones in torrential streams, fossil Diptera and the British fauna as a whole. On all these groups and many others he published freely and indeed by the end of 1932 over 270 titles stood to his credit, represented by more than 3,000 pages of print. As a testimony to his industry it is perhaps worth mentioning that to provide some of the illustrations in these papers he himself prepared 1,800 drawings and 400 photographs in his spare time. Since then very many more have been added.

In the course of his work Edwards visited many museums on the Continent and in America, studying the collections of earlier dipterists whose descriptions were only to be elucidated by the critical examination of their material. In addition, however, he led two successful expeditions. The first, to Patagonia, Chile and the Argentine, was to some extent inspired by a desire to test Wegener's hypothesis concerning continental drift, by means of a comparative study of the dipterous fauna of that region with those of Australia and New Zealand. It led to a far-reaching account of the "Diptera of Patagonia and South Chile" which has already run to more than 2,000 pages and awaited only Edwards' summary and conclusions, now sadly lost to us. The second sprang from a desire to investigate the relationships existing between the faunas of the isolated high mountain groups of East Africa, and was concentrated mainly on Mount Ruwenzori. The first fruits of this equally successful expedition have already been published.

As a colleague both in the field and the Museum, Edwards was an inspiration, almost a source of amazement. His early years at the Museum, where he found himself working with a colleague temperamentally his antithesis and employing methods of a bygone generation, were succeeded by the testing trials to which his conscientious objections to warfare forced him. There was, however, never a word of complaint or hint of bitterness; instead, he devoted himself with ever-growing intensity to his work. The fruits of his labour it is quite beyond the scope of this brief notice to catalogue, nor are they all to be seen in his published writings. There can be few dipterists the world over, be they professionals or amateurs, who would not acknowledge him as a leader, and freely admit themselves in his debt as much for friendly help and advice as for the more formal help of his synopses, catalogues and revisions. Working on an order of insects in which novelties are a commonplace, it would have been easy for him to become a 'describing machine'; as it was, he described upwards of 2,000 new species, but always these descriptions were incidental to constructive taxonomic work on larger units of classification. Hence in practically every group of Nematocerous Diptera studied by Edwards it is to him that one turns for means of identification. This is particularly true of the British fauna, the known extent of which

he increased by some 500 species, nearly all of his own collecting. His untimely death when at the zenith of his career and with every prospect of many years of increasing productiveness is for dipterists little short of a tragedy.

N. D. RILEY.

---

#### Dr. S. P. McCallum

THE many friends of Dr. S. P. McCallum, demonstrator in physics at the University of Oxford, have heard with much regret of his death on November 16.

Dr. McCallum was well known for his many activities. He was in the New Zealand Army that fought in the War of 1914-18, and in 1920 he came to Oxford as a Rhodes scholar. He had a distinguished undergraduate career and obtained a first class in the final honours examination in physics and afterwards a research degree. He was elected to a fellowship at New College in 1928 in recognition of his research work, and shortly after to a University demonstratorship in physics.

Dr. McCallum's scientific work on the conductivity of gases was done at the Electrical Laboratory, Oxford. The investigations he made of the coefficients of ionization of electrons in monatomic gases are of much importance in the theory of conductivity. His work on the effects of impurities in gases and the remarkable differences which he observed in the forms of luminous discharges in different gases are also of much interest.

Dr. McCallum excelled as a teacher, and the personal interest he took in his pupils was very much appreciated. He also assisted in the general work of the University. For many years he was Junior Bursar of New College, and last year he was a University proctor. He will be greatly missed, not only on account of his scientific work, but also on account of his general interest in College and University affairs.

---

WE regret to announce the following deaths:

Prof. Emile Argand, professor of geology, mineralogy and palæontology in the University of Neuchâtel, aged sixty-two.

Mr. C. V. Bennett, past president of the Institution of Gas Engineers, on November 18, aged fifty-three.

Dr. Wilhelm Haberling, professor of the history of medicine in the Düsseldorf Academy of Medicine, aged seventy.

Prof. F. H. Herrick, emeritus professor of zoology in the Western Reserve University, on September 11, aged eighty-one.

Dr. P. A. T. Levene, emeritus member of the Rockefeller Institute for Medical Research, on September 6, aged seventy-one.

Colonel T. S. Sinclair, formerly member of Parliament for Queen's University, Belfast, on November 25, aged eighty-one years.