

particular aspects of Naval warfare. The reference to conditions of service including pay and prospects of promotion is vague, but it must be accepted at present as an earnest of the good intentions of the Admiralty.

The Admiralty and Government policy towards research in post-war years aims at giving research and research workers—in the broadest sense—recognition and status which they have hitherto lacked in Great Britain. It is also hoped that the R.N.S.S. will be accounted an honourable career for men whose leanings are towards science and the sea; that prospects offered by the R.N.S.S. will attract men of the highest calibre to devote their minds and their lives to solving the great problems which lie ahead of the Navy; that, though the Government service cannot generally offer monetary rewards comparable with those of the highest walks of industry, yet the other advantages of a Naval technical career will offset the possible financial disadvantage; that the Admiralty will be enabled to keep after the War some of the brilliant men who are serving it temporarily now; that there will be greater freedom for individual research workers to follow up lines of investigation for which they are personally fitted, and that the Government will not be so much inclined to look for quick returns.

OBITUARIES

Sir Arthur Smith Woodward, F.R.S.

SIR ARTHUR SMITH WOODWARD, lately keeper of the Department of Geology, British Museum (Natural History), died on September 2 at the age of eighty.

Sir Arthur was a great student of vertebrate palaeontology, the widest in his work and knowledge of his time. When he left Owens College, Manchester, as a very young man to take a post in the Museum, he recognized that the work of R. H. Traquair on palaeozoic fish had introduced a new standard of investigation and a new outlook, and immediately applied them to the study of later fishes. He travelled extensively so that he saw nearly all the original materials in the world, and his extraordinary memory enabled him to recall immediately anything which could throw light on the fossils on which he was actually working. Thus his catalogue of the fossil fishes in the British Museum marks an epoch in the study of such things. It was the first completely general detailed work since Agassiz's "Poissons Fossiles" and it has had no successor, so that it remains the point of departure from which all subsequent work has proceeded. To him came collections of fossil fish from every part of the world, to be in turn described, placed in their position in the classification, and their geological horizon determined. Thus he became known to palaeontologists everywhere, and was ultimately a foreign member of some twenty scientific societies.

But Sir Arthur's interests extended far beyond fish. He wrote on fossil Amphibia, reptiles, birds and mammals, doing something of interest in each of those groups, and finally he described the Piltown man, actually himself finding part of the material at Piltown.

His quality was well illustrated by the text-book of vertebrate palaeontology which he published in 1900. This differed in every way from those which

then existed; it was accurate, it dealt only with forms which were important morphologically, it was based entirely on materials which the author had seen, and it was readable.

When Sir Arthur entered the Museum the collections of fossil vertebrates, though large, had not been brought together on any considered plan. Under his influence and guidance they were expanded so that every important fauna in the world was represented, often by most admirable materials. But all were bought, sometimes after they had been sought for many years. Although Smith Woodward himself made a collection of fossil mammals at Pikermi, and Andrews explored the Fayum, no expedition was ever sent out at Museum expense; in consequence, during the past thirty years many foreign museums have exploited fossil faunas which are now inadequately or not at all represented in London.

But Smith Woodward always felt that he was a public servant. Everyone, British or foreign, had access to all the fossils in his charge, and was allowed to describe anything he wished. Thus the Museum gained because its collections were worked over by men from many countries, and palaeontology gained because specialists could use its materials, as if they belonged to their own institutions.

So Smith Woodward became known and admired by the whole body of palaeontologists, occupying a place no one can now fill, and leaving behind a great mass of admirable work, part of the foundation of modern palaeontology. D. M. S. WATSON.

Prof. S. P. Mercer, O.B.E.

THROUGH the death of Prof. Stephen Pascal Mercer which occurred on August 18 at the comparatively early age of fifty-three, Northern Ireland has lost an outstanding figure in the field of agricultural education and one who played a prominent part in laying a sound foundation for the Faculty of Agriculture of Queen's University, Belfast.

S. P. Mercer (S.P.M., as he was known to so many of us) was a Staffordshire man—the son of Mr. Fred Mercer, the landscape painter—and was born at Abbots Bromley in 1891. His leaning towards the study of agricultural science became apparent at an early age and is confirmed by his career as a student at Harper Adams, the Botanisches Staatsinstitut, Hamburg, and the South-Eastern Agricultural College. He was a graduate in agriculture of the University of London, and held the National Diploma in Agriculture. Before coming to Northern Ireland, Prof. Mercer held appointments as lecturer in charge of the Department of Agricultural Botany at Armstrong College, adviser in agricultural botany for the northern counties of England, and divisional organizer for the Northern Province under the Food Production Department of the Ministry of Agriculture and Fisheries. During 1919–22 he was assistant director and chief research officer in the Seed Testing Station for England and Wales. It was while holding this appointment that he made his survey of seed growing in Great Britain, which is the best known of his earlier work.

On his appointment, in 1922, as head of the Seed Testing and Plant Disease Division of the Ministry of Agriculture for Northern Ireland, he threw himself energetically into the organization of the Northern Ireland Seed Testing Station, where his long experience

and intensive knowledge of seeds and seed testing allowed him to build effectively and have left their mark on this Station as it exists to-day. The study of seeds and allied problems provided his main interest on the research side, and his book, "Farm and Garden Seeds", which is remarkable for the accuracy and beauty of its hundreds of illustrations of seeds drawn in black and white and for the attractive style of its writing, portrays him at his best. His appointment as chairman of the Research Committee of the International Seed Testing Association established his claim to international reputation. His ability was soon recognized by the rye-grass seed-growing industry in Northern Ireland, and his loss will be keenly felt by all those engaged in seed production, who looked to him continually for good advice and wise counsel.

As professor of agricultural botany (1924), dean of the Faculty of Agriculture (1928) and senior technical research officer of the Ministry (1928)—which posts he occupied at the time of his death—S. P. Mercer will be remembered by colleagues and students alike for his width of vision as a teacher, for the conscientiousness of his effort to give sound advice and for his unflinching courtesy. He became dean of the Faculty within a few years of its formation, and during his tenure of this office he succeeded in establishing it on sound lines, and gained and retained the respect of all in so doing. His conspicuous services to agricultural education and research in Northern Ireland were marked by the award of the O.B.E. in 1943.

At the outbreak of war he undertook additional duties in connexion with the control of seed production and distribution in Northern Ireland, and here he was able to bring his knowledge and experience to bear in assuming his not inconsiderable share of "the war effort".

Mercer did not enjoy robust health; he worked under a handicap which few of us are asked to bear, and knowledge of this only serves to emphasize the greatness of his achievements. A lover of peace, prevented by indifferent health from fighting to secure that peace, artist and idealist as well as man of science, gentle and retiring of nature, blessed with constancy of affection, he would have achieved much more had the strength been his and had his span of life been longer. We, his colleagues, mourn the loss of a fine and ardent spirit, an upright and just man rightly disturbed on occasion by the blatant and consistent imperfections existing in our race and grieved at his powerlessness to do more to put wrongs right.

A. E. MUSKETT.

Prof. Leo F. Goodwin

WE record with regret the death of Lieut.-Colonel Leo Frank Goodwin, professor of chemical engineering at Queen's University, Kingston, Canada, on August 15, at the age of sixty-six. He was the elder son of the late Oscar Guttmann, author of "The Manufacture of Explosives" and of "Monumenta Pulveris Pyrii". Prof. Goodwin received his engineering training at the City Guilds Central Technical College and then took his Ph.D. in chemistry at the University of Heidelberg. He was a member of the Institution of Chemical Engineers and of the Engineering Institute of Canada and a fellow of the Institute of Chemistry. He became assistant to Sir William Ramsay at University College and held an assistant professorship for some years at the City College,

New York, before taking up his chair at Queen's University. There he inaugurated the first comprehensive course in chemical engineering in the British Empire. An enthusiastic advocate of an undergraduate curriculum for chemical engineers, he probably turned out during the last thirty-five years a larger number of fully qualified and successful chemical engineers than the rest of the British Empire, exclusive of Canada.

His published work dealt mainly with large-scale chemical processes such as the manufacture of pulp for paper, acetone, causticizing and cement colouring, and he was employed as consultant to some of these industries.

Prof. Goodwin also had a distinguished military career, first in the squadron of the Inns of Court Rifles and then in the Princess of Wales Own Rifles, Canada, which he commanded for some years. In September 1914 he came to England with the 1st Canadian Division and served with them in France and Flanders during the critical 1915 campaign. After the battle of Givenchy he was seconded for service with the Canadian Munitions Board and rendered valuable technical service to the British and Allied Governments.

During the present War, Prof. Goodwin again served the Canadian Government in a military and technical capacity, and latterly supervised a number of selected research students engaged on Government sponsored research work. There is little doubt that his early demise was hastened by a long period of overwork.

Prof. Goodwin leaves a widow well known as an artist under the name of Helen Sinclair and a daughter now in the Canadian W.A.A.F. He will be greatly missed by a wide circle of friends here and in America.

R. ROBERTSON.

Dr. M. C. Mott-Smith

DR. MORTON C. MOTT-SMITH, writer in physics for Science Service, Washington, died on June 9. He was sixty-six years old. Although he joined the staff of Science Service less than three years ago, he had completed since then two important fundamental texts in physics for use in high schools and by soldiers and adult civilians. Of one of these—"Fundamentals of Electricity"—more than 650,000 have been printed, including editions for the use of the American Army and a translation into Spanish.

Dr. Mott-Smith was born in Hawaii on November 26, 1877. He graduated from the Massachusetts Institute of Technology in electrical engineering and obtained his Ph.D. in physics, philosophy and mathematics at the University of Halle, Germany. He was formerly professor of physics at Colby College and George Washington University.

WE regret to announce the following deaths:

Prof. J. C. W. Frazer, research professor of chemistry in Johns Hopkins University, on July 28, aged sixty-eight.

Sir John Jarmay, K.B.E., a director of Brunner, Mond and Co., Ltd., and of other chemical works, on August 22, aged eighty-seven.

Prof. D. E. Smith, emeritus professor of mathematics in Teachers College, Columbia University, on July 29, aged eighty-four.

Mr. H. F. Tomalin, formerly conservator of forests, Ceylon, on August 16, aged eighty-two.