

founded the National Collection of Industrial Bacteria, now located at the Torry Research Station, Aberdeen. The 1950's were the most productive period of Butlin's career: his Group worked on such strictly practical topics as the feasibility of producing sulphur on an industrial scale with the aid of bacteria, control of pollution in waterlogged gravel and clay pits, bacterial leaching of ores, bacterial contamination of petroleum; topics of less-direct applicability such as the mechanism of microbial oxidation of phenols (important in biological effluent treatment) and the continuous culture of anaerobes; relatively academic matters, though still having a practical background, such as the biochemistry of sulphate-reducing bacteria and the mechanism of the methane fermentation. By 1958, Butlin's Group was the major British research unit concerned with basic economic microbiology. The blow to British research, resulting from its disbandment by the Research Council of the Department of Scientific and Industrial Research, reverberated throughout the scientific world; it still evokes strong opinions among microbiologists, both here and abroad. Having staunchly resisted the disbandment of his Group, Butlin was compulsorily retired from the Scientific Civil Service in 1959, but, undismayed, he often emerged from retirement to undertake consultant work or to attend scientific meetings.

Butlin's conviction that microbes are of the greatest potential importance to industry, not only in production but also in the deterioration or disposal of industrial products, was fundamental both to his work and his scientific reputation. He was also a man of striking personality and culture. He was a great lover of opera; he enjoyed travel, good food, wine and companionship; he was firmly literate in the sense that he believed that, if work was worth writing up, it was worth writing well. The literary standard of his publications and, perforce, those of his Group, was high. But, most of all, he had an enormous capacity to enjoy life, an ability which he never failed to communicate to his companions, so that even quite solemn or troublesome occasions took on the character of a party or a convivial gathering. His personality inspired strong affection and he will be sadly missed, not only by his intimate friends, but by innumerable acquaintances and scientific colleagues all over the world on whom his sunny and friendly disposition made an unforgettable impact. His wife, *née* Helen Mary Fletcher, survives him; their son, Martin, is an assistant keeper at the Tate Gallery.

J. R. POSTGATE

Prof. H. Schardin

PROF. HUBERT SCHARDIN, ministerial director, Ministry of Defence, Bonn, honorary director of the Franco-German Research Institute at Saint-Louis, and director of the Ernst Mach Institute at Freiburg-in-Breisgau and Weil-am-Rhein, died on September 27, aged sixty-three.

Prof. Schardin was a good scientist and a fine man who inspired many to both scientific effort and to international understanding. The situations already mentioned do not include the capacities by which I best knew him. He was the German delegate to the International Congress on High Speed Photography, European pivot of this subject, one of the very few present at all such congresses so far and to many a legend in his own lifetime.

His whole career had been devoted to, first, ballistics, leading naturally to high-speed photography—Schlieren investigations in particular—and to philosophic interest in time. He joined Cranz in Berlin in the mid-1920's—and their association will always be remembered for their multiple spark, multiple camera technique of 1928 known simply as the Cranz-Schardin system and used in every laboratory which investigates projectiles in their many guises.

Cranz provides the link from to-day back to the scientific era of the nineteenth century and such names as Toepler and Mach, just as Schardin is a strong link to the earlier decades of this century.

When Cranz retired in 1935, Schardin took over as the German leader in ballistic photography and was in charge of the Ballistic Institute of the Technical Academy of the German Air Force from then until 1945. Later, the Franco-German Research Institute at Saint-Louis was founded with Schardin as its director. The works of this Institute, its director and his colleagues speak for themselves.

Prof. Schardin will be missed and remembered affectionately by many people in many countries, and especially by those interested in the same disciplines and philosophies. The British National Committee for High Speed Photography believes that a prize in his honour should be presented at International Congresses on High Speed Photography for worthy contributions to the subject. It could be known simply as the "Schardin Award", and the British Committee would be pleased to support such a commemoration.

G. H. LUNN

NEWS and VIEWS

The Royal Society of London : Award of Royal Medals

HER MAJESTY THE QUEEN has been graciously pleased to approve recommendations made by the Council of the Royal Society for the award of the three Royal Medals for the present year as follows: to Dr. R. A. Lyttleton, reader in theoretical astronomy in the University of Cambridge (presently at the Institute of Astrophysics, Brandeis University, Waltham, Massachusetts, U.S.A.), for his distinguished contributions to astronomy, particularly for his work on the dynamical stability of galaxies; to Dr. J. C. Kendrew, deputy chairman of the Medical Research Council Laboratory of Molecular Biology, Cambridge, for his distinguished contributions to the complete structural analysis of a protein molecule (myoglobin), particularly the biological aspects of this study; to Dr. H. C. Husband, chartered civil engineer (of Messrs. H. C. Husband and Co., Sheffield), for his distinguished work in many aspects of engineering, particularly for his design studies of large structures such as

those exemplified in the radio telescopes at Jodroll Bank and Goonhilly Downs.

Mathematics in the University of Edinburgh :

Prof. A. C. Aitken, F.R.S.

PROF. A. C. AITKEN has retired from the chair of mathematics in the University of Edinburgh, where he has been a lecturer and reader from 1925, and where he succeeded Sir Edmund Whittaker as professor in 1946. Born and educated in New Zealand, Aitken went to Edinburgh in 1923 at the age of twenty-eight as a research student, accompanied by his wife. There he received in 1925, not the degree of Ph.D. for which he was registered, but that of D.Sc., for a thesis recognized as being of quite outstanding originality and merit. No doubt his phenomenal powers of mental arithmetic provided the original impetus which led him, both in this thesis and later in many published papers, to devote so much of his life work to practical mathematics and numerical analysis. He has