in rugby that most of us will remember, and especially his regular attendance at the Oxford-Cambridge match.

After a short period at Rothamsted Experimental Station, where he was contemporary with Sir John Russell and the late Tom Goodey, he returned to the University School of Agriculture, Cambridge, in 1912, as advisory biologist, continuing in that post until 1946. Being a member of the advisory staff, Petherbridge played only a minor part in formal teaching in the School of Agriculture, but his wide experience and his genial influence was exercised in the supervision of students and the training of research workers, many of whom now hold important posts. His approach to research was essentially practical, and many students fresh from academic training had cause to be very grateful to him for a thorough grounding in field-work.

A good deal of Petherbridge's early work was done on fruit in the Histon-Cottenham and Wisbech areas and later in Essex. He was able to identify at a glance all common varieties of fruit, and the advice he gave was always based on sound practical and economic considerations. But though fruit pests claimed much of his time he was also a pioneer in many other aspects of pest control, particularly those of arable Fenland crops. The onset of the Second World War and the vigorous policy of ploughing up grass led to the setting up of a wireworm team which, besides advising farmers, undertook research on factors affecting population-levels.

Petherbridge began an association with the Committee for Sugar Beet Research in 1934 and initiated work on sugar beet pests. In a determined effort to avoid the difficulties from beet eelworm which had plagued the Continental beet sugar industry, he proposed legislation to regulate frequency of cropping in the important Fenland area. This proposal was accepted and formed the basis of the Sugar Beet Eelworm Order, still in force. Another interesting proposal, which was not accepted, was the eradication of the spindle tree, the winter host of the black bean aphid and a scourge to beet seed and root crops.

Petherbridge's dynamic personality always claimed serious attention at the conference table and at meetings of applied biologists everywhere. He fought enthusiastically and successfully for raising the salary and the status of the adviser and particularly that of his assistants and of junior entomologists elsewhere in the service. He abhorred red tape and he was very disappointed when the old advisory service was dissolved and the National Agricultural Advisory Service was formed in 1946; all members of the team that he had gathered together left the Service at this juncture and he himself retired early. For some years he maintained his interests in association with Pest Control, Ltd., and continued to serve as consultant entomologist to the Royal Agricultural Society of England—a post he took over from the late Cecil Warburton.

F. G. W. JONES

Dr. F. A. Burchardt

DR. F. A. BURCHARDT, who died on December 21 in Oxford at the early age of fifty-six, was acknowledged to be one of the most perceptive and vigorous economists of his time. His work at the Universities of Kiel and Frankfurt had, nearly thirty years ago, already established his reputation as a theoretician; but his intellectual and personal integrity was enough

to ensure his dismissal as soon as the Nazis took power. For two tense years he worked as economic and financial editor of the *Frankfurter Zeitung*—until this last foothold became untenable. He arrived in Oxford in 1935 with a small research grant from All Souls College. He now had simultaneously to adapt himself to a new academic climate, to master the difficulties of teaching and lecturing in a strange language, and to build a fresh background for his young family.

Burchardt turned his mind to statistics and applied economics: indeed, he did much to establish empirical economic research in Oxford. He joined the staff of the Institute of Statistics, eventually becoming its director in 1949. He had been elected a Fellow of Magdalen College the year before, and in 1950 was appointed reader in economic and social statistics in the University. During 1952 he went to Stanford University as visiting professor; in the same year he became a governor of the National Institute for Economic and Social Research; in 1954 he was elected a member of the International Statistical Institute and a Faculty Fellow of Nuffield College; he reported for the European Productivity Agency in 1955, and worked in the Economic Commission for Europe during 1956–57. His help was welcomed in many other fields—among them that of adult education both in Britain and in Germany.

He had an immense capacity for work, and combined his many activities with devoted service to the Institute of Statistics, his College, and the University. An unfeigned interest in other people's views, a startlingly quick perception of what they were trying to say, and a faculty—almost an instinct—for distinguishing truth from mere plausibility made him an outstanding teacher. At the Institute, he inaugurated many pioneering projects in applied economics. Although he provided an unfailing stimulus to his colleagues, never grudging them detailed criticism, he never took credit and always encouraged them to claim, and to achieve, their independence. Those who knew him will always remember his intellectual vitality, his ready humour, and his utter unselfishness.

K. G. J. C. KNOWLES

The Hon. Mrs. Ursula Grant Duff

THE Hon. Ursula Grant Duff, widow of Lieut.-Col. Adrian Grant Duff (killed in action in 1914), died on January 15, a few days before her seventy-fourth birthday, and was buried at High Elms, Farnborough, Kent. Her father was Sir John Lubbock (later Lord Avebury); her maternal grandfather was the pioneer archaeologist, General Pitt-Rivers; and at High Elms, where Charles Darwin was a neighbour, she grew up in one of the liveliest centres of intellectual ferment in England.

Many sorrows followed the death of her father in 1913, but she continued the High Elms tradition at her Chelsea home with infectious gaiety and unassuming devotion to the improvement of personal, intergroup and international relations. The leading figures of the biological and social sciences were among her frequent guests, but there were always younger workers and representatives of other disciplines to meet them. Her relations with *Nature* and its contributors were particularly close.

Her own interests ranged from liberal rationalism and the rights of women to eugenics and constructive forestry; but all were linked in her mind as ways to

the good life, and all arose from the scientific attitude in which she had been bred. Unfortunately, she could attempt no major synthesis, though she wrote and lectured on these questions with judgment, wit and uncompromising humanism.

She also did much to perpetuate her father's reputation, notably by her excellent symposium on "The Life and Work of Lord Avebury" (1924); and she has added to it the esteem in which she was widely held.

CEDRIC DOVER

NEWS and VIEWS

Forestry at Oxford: Sir Harry Champion, C.I.E.

THE retirement of Sir Harry Champion as professor of forestry at Oxford and the consequent appointment of Mr. M. V. Laurie serve to mark a notable period of development. Sir Harry succeeded in 1940, on the death of Prof. R. S. Troup, and at a time when changes in India, counterbalanced by the rising importance of forestry in the Colonies, necessitated re-organization and development: the increasing need for research was also being realized. It has been Sir Harry's main achievement to organize and carry through successfully the changes thus required. Outstanding points have been the change of forestry to an Honours School; the increasing development of postgraduate work; the occupation of the new building in 1950; and the necessary enlargement of staff and work. Sir Harry's wide experience and energy will be much missed and all hope that they will find further fruitful occupation.

Prof. M. V. Laurie

SIR HARRY was central silviculturist at Dehra Dun, India, before going to Oxford, and Mr. M. V. Laurie followed him there in that post. Now he is again following him, this time at Oxford. Mr. Laurie was born in 1901 and trained at Cambridge. He retired from the Indian Service in 1946 and became chief research officer in the Forestry Commission. He comes thus with the experience in both tropical and temperate forestry which is desirable at Oxford. The prospects of the present time indicate that change and development will still be necessary in forestry, and he will receive all good wishes for his future work.

Organic Chemistry at Perth, Australia:

Prof. D. E. White

DR. D. E. WHITE has been appointed to the recently established chair of organic chemistry in the University of Western Australia, Perth. Prof. White graduated from the University of Sydney in 1930 with first-class honours in organic chemistry, and later obtained the D.Phil. (Oxon.) for his work with Sir Robert Robinson during 1934-36. After experience with I.C.I. (General Chemicals), Ltd., at Widnes, Lancs, as tutor at St. Andrew's College, Sydney, and biochemist in the School of Public Health and Tropical Medicine in Sydney, he was appointed lecturer in organic chemistry in the University of Melbourne in 1940 and senior lecturer in charge of organic chemistry in the University of Western Australia in 1943. From the time of his arrival in Western Australia he has taken advantage of the existence of a unique natural flora, and has devoted his research interests to the organic chemistry of plant products.

White has been associated with the identification of 'callitrol' as citronellic acid, the elucidation of the structure of ravenelin, the synthesis of myristicin, a

survey of Australian anthocyanins and the identification of genistein as the major oestrogen in subterranean clover. In recent years he has been working on the structures of sesquiterpene, diterpene and triterpene compounds isolated from Western Australian plants and has built up an active and well-equipped research school now numbering about twelve honours and Ph.D. students. In addition to his research activities, White has taken a keen interest in both undergraduate teaching and in extramural activities. He was president of the Royal Society of Western Australia during 1955-56 and is now president of the Western Australian Branch of the Royal Australian Chemical Institute and dean of the faculty of science at the University of Western Australia.

Andreas Sigismund Marggraf (1709-82)

'THE second father or renewer of chemistry', Andreas Sigismund Marggraf was the son of Henning Christian Marggraf, chief apothecary to the royal court at Berlin, and was born 250 years ago on March 3, 1709. He studied chemistry, pharmacy, medicine, mineralogy and metallurgy at Berlin, Halle and Freiberg. In 1754 he became director of the chemical laboratory of the Berlin Academy of Science (later called Royal Prussian Academy of Science) and of its physics class in 1760. An able experimenter, a skilled analyst and a voluminous writer, he was responsible for a number of far-reaching contributions to chemistry, chemical industry and national economy. He made the microscope a useful aid in the chemical laboratory; worked out a cheap method for the preparation of phosphorus and of phosphoric acid, which laid the basis for important industries; prepared phosphorus pentoxide and showed that phosphorus is contained in urine as phosphates. He produced potassium cyanide, demonstrated its capacity of forming double salts with those of the heavy metals, and introduced the ferro-ferricyanides as reagents for iron. It was his preparatory work that led to the isolation by Sir Humphry Davy of the metallic elements potassium, sodium and magnesium. In 1768 Marggraf obtained hydrogen fluoride by the distillation of fluorspar with sulphuric acid. The value of his discovery of sugar in the sugar beet was only appreciated during the continental blockade of France in 1806. Marggraf died in Berlin on August 7, 1782. His collected writings were published under the title "Chymische Schriften" in two volumes (1761, 1767).

The Heaviside Manuscripts

THE Institution of Electrical Engineers' "Heaviside Centenary Volume" (1950) contained a long article by Mr. H. J. Josephs, of the Post Office Research Station, describing the contents of various unpublished Heaviside manuscripts in the possession of the Institution; much of the material would have found a place in the projected but never completed Vol. 4