he was appointed to the Sterling chair of physiology at Yale, where one of his first decisions was to name his new home the 'Laboratory' rather than the 'Department' of Physiology. Many came to him from outside, attracted, as *The Times* obituary notice of him stated, by his breadth of outlook, humanistic approach, and personal example, his own interests being mainly electrophysiological, electro-cardiographic, and endocrinological, with the physiology of aviation becoming an outstanding fourth during the Second World War.

In Oxford he had married Lucia Pickering Wheatland, and in 1956 there was a reception in the History of Medicine Library at Yale to mark his total of twenty-five years of service in the Laboratory of Physiology and in the Department of the History of Medicine. Fulton was given a bound copy of a special issue of the *Yale Journal of Biology and Medicine*, and a silver medal which his friends had inscribed to him as physiologist, teacher and humanist.

In 1959, on his sixtieth birthday, friends met again, this time at his home at Mill Rock, to be presented with copies of "The Making of a Library", in the letters on which it was based being one from Arnold C. Klebs which quoted :

"Grau ist alle Theorie
Und grün der goldne Baum des Lebens",

and in which he stated that he believed in loving the old authors when they had something lovable. Wilmarth S. Lewis briefly said that Dr. Fulton alone survived of the three friends (Harvey Cushing, Klebs and Fulton) who brought the Historical Library to Yale, and that November 1, 1959, was a moment of congratulation and thankfulness : of thankfulness for Fulton's restored health, and of congratulation on his being only sixty, with years more of discovery and instruction before him. Elizabeth Thomson, who with Madeline Stanton was responsible for most of the planning of the reception, wrote to me that Mrs. Fulton was meeting guests at the top of the steps looking lovely and giving no hint of the strain of arranging a party of seventy *sub rosa*. However, Fulton found everything a real surprise and he was simply delighted with the book.

For myself I am indebted to him for countless kindnesses over the years, including the period after the First World War, and I am truly sorry that I am not to greet him in person at the tercentenary of the Royal Society, and at the centenary of the National Hospitals for Nervous Diseases. He would, I know, have entered with zest into both occasions.

KENNETH J. FRANKLIN

Dr. S. F. Birch

STANLEY FRANCIS BIRCH was born in November 1899 at Pewsey in Wiltshire, and was educated at Hurstpierpoint College and St. Paul's School, before going to the Imperial College of Science and Technology, whence he graduated. Working with Prof. J. F. Thorpe, he obtained the degree of doctor of philosophy for research work on three-carbon tautomerism, after which he joined the staff of the (then) Anglo Persian Oil Company, with which he was to spend the whole of his working life.

His great interest was in research connected with organic chemistry, and it was in this sphere that, in 1923, he commenced his career. Under Dr. A. E. Dunstan and with a small band of scientists, he worked in a country house at Sunbury-on-Thames ; these premises he was to see develop into the Research Centre of the British Petroleum Co., Ltd. An investigation of the malodorous components of the lighter fractions from Persian crude oils led to the identification of mercaptans and from this discovery stemmed a major research effort, concerning the nature and properties of sulphur compounds in petroleum, which he continued, with some interruptions, for the next thirty-five years. In this field he was regarded as an authority, and he published numerous scientific papers and gave many lectures both in Britain and the United States. He visited the latter country many times and was well known in many industrial research centres, universities and organizations connected with the American Petroleum Institute and American Chemical Society, of which he was a member.

The study of the reactions of hydrocarbons was, however, a branch of chemistry in which he made signal contributions to the petroleum industry. This work had, as its major achievement, the discovery of the sulphuric acid alkylation process in 1936 which, together with processes resulting from the determination of the octane numbers of pure hydrocarbons, and studies of the fractionation of petroleum distillates, formed the basis of the supply, by the Abadan refinery, of vast quantities of aviation spirit during the Second World War. His researches connected with the reactions of hydrocarbons made him realize, from a very early date, the potentialities of the petroleum chemical industry, and at his death on March 25 he held the position of research associate in the Petroleum Chemicals Department.

Birch believed very strongly that research could only be directed by those in close contact with the practical operations and that most discoveries came about as a result of critical observation and experimental skill. Until the last three years of his career, when administrative duties forced him, reluctantly, to move, he occupied an office situated close to the laboratories and was a frequent visitor to the bench where many informal technical discussions took place. 'Bill', as he was known to his friends, had wide-ranging interests apart from his research work. He was keenly interested in the theatre and ballet and antique works of art, and many of his leisure hours were spent building electronic and other gadgets.

He died on March 25, and is survived by his wife, Hilda Mary, whom he married on June 24, 1925. His many friends will sadly miss the pleasure of his company and the stimulation of his personality.

R. A. DEAN

Dr. J. H. Oliver

ON June 1 James Herbert Oliver died suddenly in Ankara. He had undertaken a visit to Ceylon and India and was returning to Britain by way of Turkey, where, in pursuance of a life-long interest, he was proposing to study native barleys.

Born in Portsmouth in 1901, he was educated at St. John's College, Southsea, and the Municipal College, Portsmouth, and after a period of private study he graduated in 1920. His first post was at the Olympia Agricultural Research Station near Leamington, where he worked under Dr. Herbert Hunter, who was widely known for the production of the brewers' barleys, Spratt Archer and Plumage Archer. It was here that Oliver developed the interest that he followed so assiduously throughout