Nevertheless the book has much to commend it. The presentation is excellent and the text is carefully pitched at student level throughout. Provided the reader accepts that additional theoretical material from other sources is essential to support its undoubted practical value it will serve as a most useful handbook. The standard of production is good and the book is reasonably priced.

J. K. FOREMAN

A Dictionary of the Flowering Plants and Ferns

By J. C. Willis. Seventh edition, revised by H. K. Airy Shaw. Pp. xxii+1,214+liii. (London: Cambridge University Press, 1966.) 100*s*. net; $18.50.

IN the seventh edition of "Willis" perhaps the original aim of its author is not quite fulfilled. Dr. Willis said, in his original preface, "I have endeavoured to bring together in this book as much information as is required by all but specialists, upon all plants generally met with, and upon all these points—morphology, classification, natural history, economic botany etc.—which do not require the use of a microscope . . .". The great increase in botanical knowledge in the last seventy years has required that some of the information previously included in the dictionary be omitted if the compact, single volume format is to be preserved. This "Willis", therefore, in its 40,000 entries gives only generic and family names; common names have gone, and so have the horticultural notes—possibly a loss to some non-specialists, but such topics are treated in full in other easily accessible works. The information which is given in this largest-ever edition is as full as it could be; the aim has been to include every generic name from 1753, and every published family name from 1789. Some suprafamilial and infrafamilial taxa have been included if they are not based on generic and family names, and alternative generic names and variant spellings have been supplied in many cases where these exist. All this must greatly increase the value of the book to students and others who use it as a reference work of taxonomy.

MARY LINDLEY

Tables of Physical and Chemical Constants, and Some Mathematical Functions

By T. H. Laby and G. W. C. Kaye. Thirteenth edition. Pp. 249. (London: Longmans, Green and Co., Ltd., 1966.) 35*s*. net.

PREPARING comprehensive tables of physical and chemical data is a thankless task. The authors must jettison opinions, enthusiasms and prejudices in the pursuit of accuracy; no sooner have they finished one edition than they must start work on the next, like intellectual painters of the Forth Bridge. Kaye and Laby, who fathered the first edition of this book in 1911, had at least the satisfaction of being immortalized by it, but the present editorial board soldier on in comparative anonymity. They are Professor N. Feather, Dr. H. Barrell, Dr. E. A. Coulson and Mr. J. M. C. Scott, and they have produced the thirteenth edition with the help of a large band of contributors.

There has been a seven year gap since the last edition, a long time, as Professor Feather observes, in relation to the growth of knowledge in science. There are five additional tables, covering critical constants and second virial coefficients of gases, bond lengths, energies and angles, force constants, stability constants, and solubility products. The format remains the same; each entry includes a brief résumé containing references, which are invaluable because a book this short could scarcely hope to include everything, and references to further sources of information are certainly needed. The fact that the book has not been allowed to expand unchecked is a considerable editorial triumph, and although the growth of science probably means that it is less comprehensive than it was in 1911, it is no less indispensable.

NIGEL HAWKES

OBITUARIES

Dr. Alick Isaacs

THE death on January 26, 1967, at the age of 46 of Dr. Alick Isaacs, has robbed this country and the Medical Research Council in particular of a leading virologist with an international reputation. After a brilliant undergraduate career in Glasgow where he was born, Isaacs graduated in 1944 and spent the next three years as McCunn research scholar in the University Department of Bacteriology. He then sought training in virology, and spent first a year in Sheffield in the Department of Medicine and then two years at the Walter and Eliza Hall Institute for Medical Research, Melbourne. Two subjects attracted his interest as early as 1948—virus variation and virus interference, and it was the pursuit of the latter phenomenon which brought him stimulus, achievement and reputation to the end of his life.

First, however, variation of different cultural lines of influenza virus drew Isaacs's interest. In Melbourne he studied it as a genetic phenomenon, utilizing the technique of passage at limiting dilution to isolate pure clones of virus. This experimental work stood him in good stead when he returned to London to direct the World Influenza Centre at the National Institute for Medical Research in 1950. There strains of influenza viruses from all over the world were studied serologically and identified by this and other methods. Isaacs used the antigenic variation of the influenza viruses to pin-point the spread of epidemics and thus to throw light on the transmission of the infection. His subsequent interest in attenuation of influenza strains for possible use in immunization was hampered by his absorption in the subject of virus interference.

This had interested him particularly in Australia, and he continued work on the phenomenon with increasing tempo. Then in 1957, together with Lindenmann (a Swiss virologist), he reported the evidence that the phenomenon was a result of the elaboration by the animal cell of a protein with broad antiviral properties named by him "interferon". In the next five years, Isaacs and a series of visiting collaborators at the National Institute studied interferon, its production, mechanism of action and chemical and physical properties. He showed its biological purpose in aiding recovery from virus infection, its potential use as an antiviral prophylactic, and its experimental value as a model for research on antiviral substances. That it never became a practical weapon in the prevention or treatment of virus infections was a disappointment which in no way clouded the scientific importance of his discovery.

Isaacs succeeded Sir Christopher Andrewes in 1961 as head of the Virology Division at the National Institute, but later his health, already precarious, showed the need to conserve his energy. He became head of the Laboratory for Research on Interferon where he had fewer distractions.

In 1962 he received an honorary M.D. at the Catholic University of Louvain, and in 1966 he was elected F.R.S. To many who visited the Institute or worked in collaboration, Isaacs showed a warmth of friendship which was surprising in one so shy in youth. He retained his puckish wit and enjoyment of life to the end, and in this he was aided by his wife, Dr. Susannah Gordon—whom he met in Sheffield. His loss from a second subarachnoid haemorrhage has left a vacant corner in the lives and memories of many who knew Isaacs and admired the simplicity and integrity of all that he undertook.

C. H. STUART-HARRIS