How to Know Western Australian Wildflowers

By William E. Blackall and Dr. Brian J. Grieve. Part 2 : A Key to the Flora of the Temperate Regions of Western Australia. Pp. xxxiii+321–460+lvii. (Nedlands, W. A. : University of Western Australia Press, 1956.) 30*s*.

SINCE Gaston Bonnier and G. de Layens—with their classic "Flore de la France", published so long ago as 1887—introduced the illustrated-key type of flora, there have been many imitations. The book noticed here is the first example dealing with any part of the flora of Australia and is, in the reviewer's opinion, a good example of this type of flora. Actually the present work is Part 2 of a book first published in 1954, this part containing families 60 to 72 of the original scheme and also the family Goodeniaceae which is of especial interest in Western Australia. Dr. Blackall's original manuscripts have again been worked up by Dr. Grieve and the whole checked against as much fresh and dried material as could be obtained. From examination of the keys forming the flora it is clear that the results of monographic or other specialist work have been fully incorporated.

On the whole the drawings accompanying the different alternatives presented in the keys illustrate well the characters mentioned in the text, though in some cases the small scale makes it difficult to show the special features as clearly as one would have liked. This, however, is a common defect in such illustrated floras. Small sketches of all the species keyed-out help the student to confirm the correctness of his determinations. A complete key to the families in the whole flora is included, while the index to the species gives the authorities for the names and also the distribution according to a standard map provided. There is also a useful glossary. In addition to the many drawings in the key itself, there are five coloured plates which illustrate some of the more striking plants included in this part. Altogether, Dr. Grieve is to be congratulated on the continuation of a useful book. V. S. Summerhayes

The Cherry Kearton Animal Book

By Cherry Kearton. Pp. 168+16 plates. (London : Hutchinson and Co. (Publishers), Ltd., 1958.) 12*s*. 6*d*. net.

SOME of the best stories and anecdotes of Cherry Kearton's pet animals have been incorporated into this entertaining volume. In it the reader will meet Simba, the intrepid fox terrier, whose adventures in Africa are a far cry from his acquisition by Cherry Kearton at the Battersea Dogs' Home, and Toto, the intelligent and mischievous chimpanzee who accompanied his owner on some of his African travels. Another section of the book illustrates the wide range of Cherry Kearton's interest in animal life and recounts his friendships with a penguin, an Algerian sand rat and a trapdoor spider. The book closes with some stories of Mary, in her time probably one of the best known chimpanzees in the world, whose accomplishments seem at times to be almost human.

Cherry Kearton's pleasant and easy style carries the reader effortlessly through these stories of his animal friends, and throughout them there runs his understanding that patience and kindness are the only ways to gain the trust and affection of animals. The book is illustrated with photographs of its characters, and in addition there are a few photographs of animals in their natural setting. There is little to criticize : deer do not occur in Africa and three of the photographs have little relation to the text. The book has an obvious appeal to children, and is an admirable introduction for them (and perhaps for their parents) to the writings of Cherry Kearton. J. E. Hill

Nuclear Reactor Metallurgy

By Walter D. Wilkinson and William F. Murphy. With a chapter by Warren J. McGonnagle. Pp. viii+382. (Princeton, N.J. : D. Van Nostrand Company, Inc. ; London : D. Van Nostrand Company, Ltd., 1958.) 42*s*.

THIS book is based on a course of lectures given at the Argonne National Laboratory since 1955. Appropriately, at least half of it deals with uranium, which is treated in detail from the ore to radiation damage in the reactor in a series of chapters. Other chapters deal with plutonium, thorium, ceramics, canning and control rod materials, liquid metals, and radiation damage in engineering materials. A final chapter on non-destructive testing is contributed by Warren J. McGonnagle. In general, the treatment of the chemical and metallurgical engineering topics is much better than that of the physical topics. The important effects of thermal and irradiation strains on the mechanical properties of uranium are overlooked, and the discussion of specific heats and thermal conductivity in Chapter 6 is very weak. Radiation damage in graphite is dismissed in four lines. This latter, as well as the omission of a discussion of magnesium as a canning material, is perhaps understandable since the authors confine themselves mainly to American reactors; but it will disappoint British readers. The chapter on liquid metals is interesting, as are also those on thorium, beryllium, and zirconium, and the book as a whole serves as a useful partial account of the science of reactor materials. A. H. Cottrell

Truth and Denotation

A Study in Semantical Theory. By Prof. R. M. Martin. Pp. xii+304. (London : Routledge and Kegan Paul, Ltd., 1958.) 42*s*. net.

THIS is likely to be a useful book, both to the specialist and to anybody who is prepared to take some trouble to read and think carefully about formalized languages and their place in the methodology of science. It will go some way to answer the question as to why mathematicians and logicians invent the particular signs and symbols which are now becoming almost common coin. The first chapter deals in general with this theme, whereas the rest of the book is an able and clear discussion of the machinery, including such topics as first-order languages, syntax, non-translational semantics, and the theory of sets and types.

It is well to recollect that it is a feature of non-translational meta-languages that they are not strict translations of the object language. Thus is introduced the relation of 'comprehension'. The importance of this, among other things, is that the classical system of Aristotelean logic is not very satisfactory, when *relations* are involved ; but from here, with one semantical primitive, one can build up a species of extended Boolean algebra. It will be interesting to see whether it will stand up to the desire of some applied mathematicians to use these methods for complex electrical networks. Considerable success has already attended efforts to do so with some of the 'classical' Boolean equations. F. I. G. Rawlins