Supplement to the Dictionary of Gardening

A Practical and Scientific Encyclopædia of Horticulture. Edited by Patrick M. Synge. (Royal Horticultural Society.) Pp. x+334. (Oxford: Clarendon Press; London: Oxford University Press, 1956.) 42*s*. net.

THIS supplementary volume, published five years after the main work, is in two parts. The first contains the promised lists of recommended varieties of flowers, fruit and vegetables, and also a valuable article on fertility and infertility in fruit. The second, and rather larger, is "Additions and Corrections".

With a compilation of this nature, it must be very difficult indeed to decide when to call a halt to revisions and commit to press, and some matter must inevitably be out of date even when it appears. Also, varieties of cultivated plants are so numerous and multiplying so rapidly that it would be unfair to expect recommended lists to be entirely up to date, comprehensive, or really satisfactory to the specialists in any particular group.

Nevertheless, it is disappointing to find columns of bare names (for example, vegetable marrow), quite misleadingly fragmentary selections (for example, *Primula*, hardy), and many lists like trade catalogues in which several varieties share paraphrasings of one description, with few references to distinctive virtues, and even more important, vices. Many omissions are obvious. Where, for example, are the 'Cambridge' strawberries and brussels sprouts, or the Pacific strain of delphiniums? Yet space is devoted, in an already over-bulky horticultural reference work, to such things as detailed variation within the *Alchemilla vulgaris* aggregate.

The list of contributors to Part 2 is a guarantee of the solid worth of many articles. A more critical selection of genuinely horticultural matter is desirable when the supplement is itself revised and re-issued.

S. Clay

An Outline of Atomic Physics

By Prof. Oswald H. Blackwood, Thomas H. Osgood and Prof. Arthur E. Ruark. Third edition. Pp. x+501. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1955.) 60*s*. net.

FOR the third edition this well-established introduction to atomic physics has been completely rewritten, and the main advances in the subject up to about 1953 are very lucidly explained. The treatment is chiefly descriptive, but the authors give a good elementary outline of what wave-mechanics is about and indeed discuss in some detail the difficulty of arriving at a theory of the deuteron. The account of cosmic rays and of the new particles discovered in this field is fuller than anything which has yet found its way into books of this standard. The final chapter on the Michelson–Morley experiment and the development of relativity theory is also very good.

Little is said about the fascinating subject of ferromagnetism, and the few lines devoted to this are rather confusing; also, it is hard to interpret the statement on p. 76 that electromagnetic radiation is the common carrier that transmits energy between electrons and nuclei. But the marks lost for these minor points are recovered (with a handsome bonus) for the treatment of the elementary particles, for the "model for visualizing their spins, charges, and masses", and for the clear explanation of the concepts of statistical character and parity. A number of problems, complete with answers, and a list of references for further reading are provided.

The preface states that the original aim of the book was to equip non-specialists to keep abreast of current progress in physics; in this it should be most successful.

G. R. Noakes

Introduction to Chemical Engineering

By Walter L. Badger and Prof. Julius T. Banchero. (McGraw-Hill Series in Chemical Engineering.) Pp. ix+753. (London: McGraw-Hill Publishing Company, Ltd., 1955.) 71*s*. 6*d*.

THE heading of this book should surely be "Badger and McCabe's Elements of Chemical Engineering, third edition revised and enlarged by W. L. Badger and J. T. Banchero", for this is what the book is, in spite of the change of title and authors. A large proportion of the letterpress is identical with that in Badger and McCabe's second edition, both books have sixteen chapters with similar titles and many of the illustrations in the older work appear in the new volume with very minor alterations, made perhaps to substantiate the claim in the preface that "the illustrations have all been specially drawn for this book"; and yet the earlier book is not even mentioned.

Some superfluous matter has been omitted, and nearly all the chapters have been enlarged and brought up to date, especially those on evaporation, distillation, extraction, humidity and gas absorption; and the book retains the valuable characteristic of emphasizing the importance of plant and its constructional details. The problems and worked-out examples are nearly all new. In order to maintain the same thickness and reduce the weight, the paper is now thinner and the lines longer and closer together, allowing an increase of about 35 per cent in the contents. Some of the diagrams are not up to the standard usually found in this series, and the general appearance and clarity have suffered.

In spite of these minor defects, there is little doubt that the book will continue to enjoy the popularity of its predecessor of 1936, which in those days was generally regarded as the Bible of the chemical engineering student.

H. E. Watson

The Planet Venus

By Patrick Moore. Pp. 132+8 plates. (London: Faber and Faber, Ltd.. 1956.) 15*s*. net.

THE publisher's note about this book states that it is the first serious book in any language devoted to Venus. This is not surprising, as so little is known about the physical conditions on Venus; even the period of its rotations is not known with certainty. But this book is disappointing in many ways. Space is given to the discussion of such matters as the canals of Venus, which are based on observations that are discredited, and of the ashen light, which is a purely instrumental effect, being never observed with reflecting telescopes but only with refractors that are not perfectly achromatic. In some other respects the book is quite inadequate. For example, there is no discussion of the polarization curve; no reference is made to the variation of polarization over the disk or of the appearance and disappearance of areas of abnormal polarization. Such observations have an important bearing on the nature of the atmosphere of Venus and of the clouds in its atmosphere. As an account of the present state of knowledge about Venus, this book cannot be recommended.

H. Spencer Jones