

82 marks, and one-third of the second volume, ending abruptly in the middle of a sentence on p. 272, at a cost of 21 marks. The complete work may therefore cover more than 4000 pages and cost perhaps £20. A work of this size is too big to be used as a text-book, especially when the student has to read it in a foreign language; but it is the type of book which German authors have a special skill in producing and English readers are sometimes glad to consult. The appearance of a second edition may be taken as evidence that there is a market for such a book, either in its country of origin or abroad.

T. M. LOWRY.

Nitrogen and Phosphorus.

A Comprehensive Treatise on Inorganic and Theoretical Chemistry. By Dr. J. W. Mellor. Vol. 8: N. P. Pp. x + 1110. (London: Longmans, Green and Co., Ltd., 1928.) 63s. net.

THE eighth volume of Mellor's "Comprehensive Treatise" carries the simple sub-title N.P., recalling the equally simple sub-title of the first volume, H.O. It is in many respects a critical volume, since the chemistry of nitrogen (and in a lesser degree the same statement may be made of phosphorus) has undergone an extensive transformation in many of its aspects since the first volume of the treatise was issued in 1922, and it might very well have happened that the treatise would have lagged behind, and shown signs of being a little out-of-date at this stage. A study of the new volume immediately dispels this fear, since the author has had an almost uncanny success in searching out even the least pretentious of post-War publications and setting them in place in his narrative.

This feature of the new volume is well illustrated by the sections on "The valency of nitrogen" and on "The constitution of the ammonium compounds and the amines," where the old historic formulæ are retained in their proper setting, but are supplemented on one hand by Werner's formulæ and on the other hand by formulæ based upon the electronic theory of valency. The author's treatment of co-ordination compounds is indeed exceptionally able and authoritative, although he has not had the opportunity of acquiring this authority by original work on the subject.

The section on "Allotropic forms of nitrogen" bears the same testimony to the author's skill and perseverance in keeping his narrative up-to-date, since physical and chemical observations are cited right up to 1927, including the contents of a number

of letters to NATURE, which are quoted along with the more substantial contributions to scientific literature.

The sections which deal with the fixation of nitrogen have the same general character as the rest of the volume, since the author gives a very large range of references to original literature, without attempting to supply full details of technical processes, although several of the principal types of electric furnace are illustrated by simple diagrams. The sections on various nitrogen compounds contain some unfamiliar information, as, for example, that a freezing-point diagram can be drawn to demonstrate the crystallisation of solid N_2O_3 from a mixture of NO and N_2O_4 , and that nitric oxide forms a transient compound with chlorine of the composition $NOCl_2$. The existence of $NOBr$, $NOBr_2$, and $NOBr_3$ is also indicated by the same methods.

Phosphorus provides less scope than nitrogen for interesting paragraphs, but is discussed with equal efficiency. The polar formula for phosphorus pentachloride should, however, have been attributed to Langmuir, and Sugden's evidence for the existence of a semi-polar bond in phosphorus oxychloride might have been cited. The formulæ assigned to the polyphosphoric acids are of an old-fashioned type, in which the phosphorus is generally quinquivalent, but they are scarcely open to criticism in a treatise which has a definite historical character since the formulæ are generally those of the author whose work is being described.

Dr. Mellor is obviously not flagging in the Herculean task that he has undertaken, but on the contrary proceeds "from strength to strength," and can certainly be congratulated on the vigour and efficiency of the latest section of his work.

Marriage and Maternity.

Hymen: or The Future of Marriage. By Norman Haire. (To-day and To-morrow Series.) Pp. 96. (London: Kegan Paul and Co., Ltd.; New York: E. P. Dutton and Co., 1927.) 2s. 6d. net.

Motherhood and its Enemies. By Charlotte Haldane. Pp. vi + 256. (London: Chatto and Windus, 1927.) 6s. net.

(1) **M**ANKIND being what it is, marriage must be unsuccessful in the great majority of cases. It is so because of the general ignorance of matters relating to sex, the result of a faulty sex-education, and because of prejudices, the fruits of faulty standards of sex-conduct based on the