

*Prout's Hypothesis.* Papers by Dr. William Prout (1815-16), J. S. Stas (1860) and C. Marignac (1860). (Alembic Club Reprints, No. 20.) Pp. 58. (Edinburgh: Oliver and Boyd; London: Gurney and Jackson, 1932.) 2s. 6d. net.

SOON after the classification of the chemical elements by Lavoisier, and the decomposition of the alkalis by Davy, the latter, in 1812, suggested that the "undecomposed substances" may be composed of hydrogen "with another principle yet unknown in the separate form". If we identify this principle with the electron, we have in this speculation (not mentioned in the present Alembic Club Reprint) an anticipation of the modern theory of atomic structure as striking as the prediction of isotopes by Crookes in 1886, and of the packing effect by Marignac in 1860. The logical development of Davy's idea was found in the papers of Prout (1815-1816), which are reprinted in the present volume, suggesting that atomic weights are whole multiples of that of hydrogen, and that "we may almost consider the  $\pi\rho\acute{\omega}\tau\eta$   $\beta\lambda\eta$  of the ancients to be realised in hydrogen".

Stas's criticism of Prout's hypothesis (1860), on the basis of exact atomic weight determinations, leading him to the conclusion that it is "nothing but an illusion, a pure hypothesis contradicted by experiment", follows. The thoughtful commentary on Stas's paper by Marignac (1860), in which it is suggested that "while preserving the fundamental principle of . . . the hypothesis of the unity of matter", we might "suppose that the cause which has determined certain groupings of the atoms of the sole primordial substance" may have exercised an influence such that "the weight of each group might not be exactly the sum of the weights of the primordial atoms composing it", was entirely disregarded.

The further progress of the matter is very ably summarised in a historical introduction to the booklet, which is one of great interest and fully maintains the high standard of the Alembic Club Reprints.

*The Standard Natural History: from Amœba to Man.* Contributors: G. J. Arrow, M. Burton, Dr. W. T. Calman, J. G. Dollman, Dr. F. W. Edwards, C. C. A. Monro, J. R. Norman, H. W. Parker, W. P. Pycraft, N. D. Riley, G. C. Robson, Theodore H. Savory. Edited by W. P. Pycraft. Pp. xiv + 942 + 12 plates. (London and New York: Frederick Warne and Co., Ltd., 1931.) 15s. net.

IT is somewhat of a venture to compress a knowledge of the animal kingdom, with its three-quarters of a million species, into a single volume, and preserve at the same time a balance between the different groups. But here the attempt has been successfully made, the more obscure groups receiving due place, the more familiar groups, such as birds and mammals, properly being singled out for relatively more expansive treatment.

The systematic cast of the book gives a false impression of its contents, for bare description has been reduced to a minimum and living interest has been sustained by the accounts of habits and of the links between structure and environment; the section on Diptera is a fine example of condensed biological survey. In most of the sections there is a freshness of treatment traceable to the specialised knowledge of the contributors and among the 900 odd illustrations we are grateful for a great many new figures, although several of the pictures of mammals and birds, from indifferent museum specimens, might have been bettered.

*Bentham's Theory of Fictions.* By C. K. Ogden. (International Library of Psychology, Philosophy and Scientific Method.) Pp. ciii+161+3 plates. (London: Kegan Paul and Co., Ltd., 1932.) 12s. 6d. net.

IN a public lecture recently given in London, Prof. Schlick, of Vienna, said that if philosophers had given more consideration to linguistics, the history of our civilisation would have been different. Indeed, it seems that only a realistic analysis of language could purify philosophy and the special sciences of much of their misleading verbiage. The modern schools of mathematical logicians have done useful work in this direction. Yet the developments of the present should not make us forget the attempts of the past. A thorough study of Bentham's "Theory of Fictions" will prove it to be a mine of information and suggestions. Mr. Ogden has done a real service to philosophy by publishing this book, which will be considered by many as a revelation and as a valuable basis for further research. The actual interest of Bentham's "Theory of Fictions" is enhanced by Mr. Ogden's very able introduction. T. G.

*The Spirit of Language in Civilization.* By Karl Vossler. Translated by Oscar Oeser. (International Library of Psychology, Philosophy and Scientific Method.) Pp. vii+247. (London: Kegan Paul and Co., Ltd., 1932.) 12s. 6d. net.

LANGUAGE is viewed at an unusual angle in this work, which describes the interweaving of language with the other activities of mind. It is the philosophy rather than the analysis of language it presents. The author has striking conclusions to put forward on a variety of subjects such as "Language and Life", "Language and Nature", "Language and Science", "Language and Poetry", "Language and Religion". To quote but one of them, he thinks that mathematics might be called a language which allows only pronouns in place of nouns, imperatives in place of verbs, copulative equations instead of adjectives and adverbs. The purpose of mathematical co-ordination of language and concept is the liberation of the concept from the senses. But there is danger in an extreme liberation, because too much reason and abstraction scarcely allow thought to find the way back to itself.