

Cambridge Readings in the Literature of Science. Being Extracts from the Writings of Men of Science to Illustrate the Development of Scientific Thought. Arranged by W. C. D. and M. D. Whetham. Cambridge, The University Press, 1924. x+275 pp.

One of the most difficult things for a student of history to do is to reconstruct the "mental furniture" of other times and civilizations—to comprehend feelings and mental attitudes which were natural products of an environment containing elements and circumstances so foreign to the present-day student as to be entirely unsuspected by him.

It is in this respect that the reading of source material is most helpful. By a study of the exact language of original documents one gains, not only more precise and accurate information, but also something of the spirit and intellectual perspective of the time, which summaries and secondary accounts can not supply.

In the last twenty-five years, especially, these facts have become well recognized and many collections of "Select Documents," "Select Readings from the Original Sources," "Reprints and Translations," etc., have appeared. Most of these collections have been in the field of social sciences. The book under review is a welcome addition to the relatively few which have been published in the field of natural sciences.

Mr. Whetham and his daughter have arranged a selection of extracts from the writings of men of science to illustrate the development of scientific thought along three lines:

- (1) the structure of the universe—cosmogony;
- (2) the nature of matter—atomic theories;
- (3) the development of life—evolution.

Along these lines the authors "try to trace the thoughts from the inspired poetry of the Book of Genesis to the latest revelations of the telescope and the laboratory."

There is a satisfaction in reading Newton's ideas about the *System of the World*, and John Dalton's *On Chemical Synthesis* exactly as they formulated them. Translations of extracts from the writings of Aristotle, Archimedes, Copernicus, Laplace, Lamarck, Bergson, and more than a dozen others, are a bit less satisfying than if given in the original language, but are, of course, much more widely available. The insertion of explanatory and historical material between extracts aids greatly in carrying the thread of the story and these insertions seem to the reviewer to be very well written.

In looking over any such collection one is likely to feel that there are omissions more notable than some of the selections given and it is quite probable that many readers of the book under consideration will have that impression. For example, how many will feel that a worthy attempt at tracing the development of human thought concerning the structure of the universe can afford to give no quotation from the great *Almagest* of Claudius Ptolemaeus, the greatest existing authority on ancient astronomy, or can afford, in tracing the story of the theory of evolution, to omit some quotation from Alfred Russell Wallace's famous essay *On the Tendency*

of *Varieties to Depart Indefinitely from the Original Type*, which led to the publication of Darwin's preliminary essay in 1858? However, the matter of selection is always a difficult one and largely dependent upon individual judgments.

The value of the book, in the opinion of the reviewer, would have been greatly enhanced by incorporating with each extract a paragraph* indicating various other publications, if such exist, where the writing from which the extract was taken (or the original text in case of a translation) may be found. To quote an extract as "From *The Works of Archimedes*, edited by Sir Thomas Heath," with no mention of publishers or date or place of publication or reference as to where the original Greek text may be found, and no listing of cross-references to other publications containing the same writing, offers little help and encouragement to one who may be interested in investigating the subject more fully.

U. G. MITCHELL

Les Nouveaux Axiomes de l'Electronique. By R. Ferrier. Paris, A. Blanchard, 1925. 61 pp.

This is an attempt to modify the laws of electrodynamics to fit the quantum theory of Bohr. The author considers two point charges and puts the energy of the system equal to the quotient of a function of the relative velocity by the distance between the charges. This leads to a fundamental dynamical frequency proportional to the energy instead of proportional to the three-halves power of the energy as in the classical dynamics. While the potential energy on the classical theory is inversely proportional to the distance between charges, it is difficult to see how any theory which hoped to obtain macroscopic results at all comparable with experiment can proceed from an expression for the total energy of the form used in this monograph.

LEIGH PAGE

The Quantum Theory. By N. M. Blich. New York, Longmans, Green & Co., 1926. 112 pp. \$3.00.

Beginning with the general problem of radiation, the author has given a very brief sketch of the development of the quantum theory leading to Planck's formula. He next introduces the light-quantum hypothesis and its application to the photo-electric effect. The subject of atomic heats is briefly considered, and finally Bohr's theory of spectra and atomic constitution is outlined. The treatment throughout is too little critical and too superficial to be of much value, but it may serve a useful purpose as an outline, with references to the original sources, of the older form of the quantum theory.

E. P. ADAMS

* Such, for example, as the excellent bibliographical paragraphs in William MacDonald's *Select Documents Illustrative of American History*, New York, The Macmillan Company, 1924.