

there are many who think discovery not less important than measurement.

The 113 pages of this essay contain some 150 quotations; some are of merely literary interest, like those from Pater or from Cardinal Newman. Most of them are from the original literature of the subject, and show that the essayist has in mind the material required for the formation of independent opinions, and for their defense. Sometimes the style is not quite so clear as the nature of the subject requires, and the frequent study of a single sentence or passage does not escape giving to the whole something which suggests the schoolmen. This kind of study also demands a good deal of skill in interpretation in order to avoid pitfalls, so that many who carefully consider the argument of the essay will often differ from its understanding of opinions. An instance of this is in the assertion that Faraday was an agnostic in regard to the atomic theory, when he himself is quoted as saying that he believed in atoms, but was agnostic in regard to attaching to the atomic theory the notion of little solid particles existing independently of the forces of matter.

It should be said that the essayist is well aware that he is not, at present, on the side with the majority of chemists. The essay is cordially commended as a valuable contribution to the easier understanding of the growth of atomic and molecular conceptions.

EDWARD W. MORLEY.

THE FOLLIES OF SCIENCE AT THE COURT OF RUDOLPH II, 1576-1612. BY HENRY CARRINGTON BOLTON. Milwaukee: Pharmaceutical Review Publishing Co. 1904. 8vo., 217 pp. Price, \$2.00.

This posthumous volume, by the late H. Carrington Bolton, furnishes an interesting picture of the period when true science was emerging from mediaeval philosophy, and from the snares set in its pathway by the beliefs in magic, witchcraft, alchemy and astrology. In all of these vagaries the Emperor Rudolph was a firm believer, but while he surrounded himself with charlatans of every description, a few real investigators, among them Tycho Brahe and Kepler, were given his help and patronage. Therein the Emperor "buildded better than he knew."

To the preparation of this work Dr. Bolton brought all of his remarkable knowledge of early scientific history to bear. The story is told in narrative form and wanders far afield from the Bohemia in which its main scenes are laid. Dr. Dee and his

magic crystal in England; Tycho Brahe at Uraniborg, and other noted and notorious figures march across the stage. There are passages describing the observatories, alchemical laboratories and pharmacies of the sixteenth century, and with them are appropriate full-page illustrations which make the descriptions more real. There are also reproduced recipes for nauseous and complex remedies whereby all diseases may be healed, and directions, couched in alchemical language, for the transmutation of base metals into gold. To any student of the history of science the volume is well worth reading. It occupies a place by itself in scientific literature.

F. W. CLARKE.

REFLECTIONS SUGGESTED BY THE NEW THEORY OF MATTER. BY the RIGHT HON. ARTHUR JAMES BALFOUR, M.P. New York: Longmans, Green & Co. Paper, 24 pp. Price, 38 cents.

This little pamphlet is a reprint of the presidential address delivered before the British Association for the Advancement of Science at Cambridge, last August. The point of view of the author is largely given in the following quotation. Speaking of the physicist, he says: "He seeks for something deeper than the laws connecting possible objects of experience. His object is physical reality; a reality which may or may not be capable of direct perception; a reality which is in any case independent of it; a reality which constitutes the permanent mechanism of that physical universe with which our immediate empirical connection is so slight and so deceptive."

W. A. NOYES.

DIE HETEROGENEN GLEICHGEWICHTE VOM STANDPUNKTE DER PHASENLEHRE. BY H. W. BAKHUIS ROOZEBOOM. Zweites Heft: Systeme aus zwei Komponenten. Erster Teil. Braunschweig: Friedrich Vieweg und Sohn. 1904. 14×22 cm.; xii+465 pp. Price, 12.50 marks.

This number deals with two-component systems in which only one liquid phase is possible and in which only the pure components occur as solid phases. To the majority of chemists the methods of determining the solid phases will be one of the interesting chapters. Among these methods the first is the orthodox one of removing the solid phase and analyzing it. This is the one to be employed wherever possible and this is practically the only one used to any extent by inorganic and organic chemists to-day. This method is not applicable for metals, and an examination of the structure under the microscope is the only really reliable way of coming to a correct conclusion. Some conclusions can