

---

**A New System of Chemical Philosophy.** *John Dalton*, with an introduction by Alexander Joseph. The Philosophical Library, New York. 1964. 168+xii p. \$6.00.

John Dalton described his *New System of Chemical Philosophy* to the audience of the Royal Institution in March, 1803. Not until 1808, after he had repeated and amplified the lectures in Edinburgh and Glasgow, were they printed. The Philosophical Library, in its series "Science Classics Library", has reprinted the first part of volume one of Dalton's work (not the entire volume, as the introduction states). Even a partial reprint is a service, for copies of the original work are scarce, and Dawson's more recent facsimile of the complete volumes was limited to 1000 copies.

Since the initial portion of Dalton's first volume contains the outlines of his atomic theory, the text is of considerable interest to antiquarians and to those who may wish to read for themselves just what comprised Dalton's original theory. Some of what Dalton had in mind can be discovered from this partial reprint. The first hundred or so pages of text are devoted to heat, or caloric, which Dalton, in company with some of his contemporaries, believed to be a substance. In the second section of about sixty pages, "On the Constitution of Bodies," Dalton's atoms—hard, discrete, spherical and mutually repulsive—are described. The brief final section, "On Chemical Synthesis", explores the consequences of the atomic theory and the strict application of the law of definite composition. Dalton summarized his values for what we now call atomic weights, and pictured various species of compounds in terms of the basic atoms. Ammonia, for example, in Dalton's representation, contained one atom of azote [nitrogen] and one of hydrogen; water, one of oxygen and one of hydrogen. Their relative weights he calculated to be six and eight, respectively. [Present day values, are approximately seventeen and eighteen.]

Dr. Joseph's introduction is disappointing. Although Dalton's life is briefly sketched, the reader who wishes to learn what stage of Dalton's development the monograph represents must seek elsewhere. Of other scientific developments contemporary with the Dalton atom, or of that of Boscovitch, Dr. Joseph provides no clue.

J. Z. FULLMER