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978-1-108-01968-2 - A New System of Chemical Philosophy, Volume 2

John Dalton

Frontmatter

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A New System of Chemical Philosophy

The renowned English chemist and meteorologist John Dalton (1766–1844) published *A New System of Chemical Philosophy* in two volumes, between 1808 and 1827. Dalton's discovery of the importance of the relative weight and structure of particles of a compound for explaining chemical reactions transformed atomic theory and laid the basis for much of what is modern chemistry. Volume 2 was published in 1827. It contains sections examining the weights and structures of two-element compounds in five different groups: metallic oxides; earthy, alkaline and metallic sulphurets; earthy, alkaline and metallic phosphurets; carburet; and metallic alloys. An appendix contains a selection of brief notes and tables, including a new table of the relative weights of atoms. A planned second part was never published. Dalton's work is a monument of nineteenth-century chemistry. It will continue to be read and enjoyed by anybody interested in the history and development of science.

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VOLUME 2

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A
NEW SYSTEM
OF
CHEMICAL PHILOSOPHY.

PART FIRST

OF
VOL. II.

BY
JOHN DALTON, F.R.S.

President of the Literary and Philosophical Society, Manchester;

Corresponding Member of the Royal Academy of Sciences, Paris;

Member of the Royal Academy, Munich, and of the Cæsarean

Natural History Society, Moscow;

Honorary Member of the Royal Medical Society, Edinburgh,

and of the Philosophical Societies of Bristol, Cambridge,

Leeds, Sheffield and Yorkshire.

Manchester:

Printed by the Executors of S. Russell,

FOR

GEORGE WILSON, ESSEX STREET, STRAND,
LONDON.

—
1827.

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TO
JOHN SHARPE, Esq. F. R. S.
OF STANMORE, MIDDLESEX,
(Late of Manchester,)
AS A TESTIMONY OF HIS FRIENDLY REGARD, AND OF HIS
LIBERAL ENCOURAGEMENT GIVEN TO THE PROMOTION
OF CHEMICAL SCIENCE:
AND TO
PETER EWART, Esq.
*Vice-President of the Literary and Philosophical Society
of Manchester,*
ON THE SCORE OF FRIENDSHIP,
BUT MORE ESPECIALLY FOR THE ABLE EXPOSITION AND
EXCELLENT ILLUSTRATIONS OF THE FUNDAMENTAL
PRINCIPLES OF MECHANICS,
IN HIS ESSAY ON THE MEASURE OF MOVING FORCE,†
THIS WORK IS RESPECTFULLY INSCRIBED BY
THE AUTHOR.

† Manchester Memoirs, Vol. II. *(second series.)*

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PREFACE.



THE work now submitted to the public was begun to be printed in 1817; and the 13th and 14th sections, containing the oxides and sulphurets, were printed off before the end of October of the same year. The printing of the rest of the work to the appendix was finished in September, 1821. One sheet of the appendix was printed at the end of 1823; but no addition was afterwards made till May, 1826; when the printing was resumed, and has been continued to the present time.

It may be asked, what were the motives for such a plan of procedure. To this it may be replied, that soon after the publication of the first volume (in 1810), I began to prepare materials, and to institute experiments, relating to the oxides, &c., with occasional diversions into other departments of chemistry, as circumstances arose. As a great portion of my time was always necessarily engaged in professional duties, and as that part of the work I was about to commence was one running into detail, I thought it would be best to print it as I proceeded, whilst the train of thought and of experiments was fresh in view. The advantage in this case was expected to be partly at least counterbalanced by the loss of discoveries and improvements likely to be made in the interval between the printing and publishing of the several articles. This I was aware of; but as a principal object I had in view was to

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give the results of my own experience, in the various departments of chemical science, rather than to form the best compilation of Chemistry at the period, this object was most likely to be obtained by the proposed plan. It is true the time the work has been in the press has far exceeded my expectation; notwithstanding this I am not conscious of any very material alterations or additions, which I should wish to make at the present moment.

It affords me great pleasure to acknowledge the assistance I have had during the progress of this volume, from a valuable selection of chemical apparatus, for which I am indebted to the generosity of Mr. Sharpe; also the continued and friendly intercourse with Dr. Henry, whose discussions on scientific subjects are always instructive, and whose stores are always open when the promotion of science is the object.

My present design is to add a second part to this volume, and with that to finish the work. It will consist of the more complex compounds. Acids, and other products of the vegetable kingdom, Salts, &c., will form principal parts. Already I have a stock of experiments on these subjects; but I am not satisfied without exploring this region afresh.

August, 1827.

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