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978-1-108-07770-5 - A Mathematical and Philosophical Dictionary: Containing an Explanation of the Terms, and an Account of the Several Subjects, Comprized under the Heads Mathematics, Astronomy, and Philosophy, Both Natural and Experimental: Volume 1

Charles Hutton
Frontmatter

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A Mathematical and Philosophical Dictionary

Born into a Newcastle coal mining family, Charles Hutton (1737–1823) displayed mathematical ability from an early age. He rose to become professor of mathematics at the Royal Military Academy and foreign secretary of the Royal Society. First published in 1795–6, this two-volume illustrated encyclopaedia aimed to supplement the great generalist reference works of the Enlightenment by focusing on philosophical and mathematical subjects; the coverage ranges across mathematics, astronomy, natural philosophy and engineering. Almost a century old, the last comparable reference work in English was John Harris' *Lexicon Technicum*. Hutton's work contains many historical and biographical entries, often with bibliographies, including many for continental analytical mathematicians who would have been relatively unfamiliar to British readers. These features make Hutton's *Dictionary* a particularly valuable record of eighteenth-century science and mathematics. Volume 1 ranges from *abacist* (a user of an abacus) to the English physician and Newtonian scientist James Jurin.

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VOLUME 1

CHARLES HUTTON



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University Printing House, Cambridge, CB2 8BS, United Kingdom

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www.cambridge.org

Information on this title: www.cambridge.org/9781108077705

© in this compilation Cambridge University Press 2015

This edition first published 1796
This digitally printed version 2015

ISBN 978-1-108-07770-5 Paperback

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DICTIONARY:

CONTAINING

AN EXPLANATION OF THE TERMS, AND AN ACCOUNT OF THE SEVERAL SUBJECTS,

COMPRIZED UNDER THE HEADS

MATHEMATICS, ASTRONOMY, AND PHILOSOPHY

BOTH NATURAL AND EXPERIMENTAL:

WITH AN

HISTORICAL ACCOUNT OF THE RISE, PROGRESS, AND PRESENT STATE OF THESE SCIENCES :

ALSO

MEMOIRS OF THE LIVES AND WRITINGS OF THE MOST EMINENT AUTHORS,

BOTH ANCIENT AND MODERN,

WHO BY THEIR DISCOVERIES OR IMPROVEMENTS HAVE CONTRIBUTED TO THE ADVANCEMENT OF THEM,

IN TWO VOLUMES.

WITH MANY CUTS AND COPPER-PLATES.

BY CHARLES HUTTON, LL.D.

F. R. S. OF LONDON AND EDINBURGH, AND OF THE PHILOSOPHICAL SOCIETIES OF HAARLEM AND AMERICA ;
AND PROFESSOR OF MATHEMATICS IN THE ROYAL MILITARY ACADEMY, WOOLWICH.

VOL. I.

LONDON:

PRINTED BY J. DAVIS,

FOR J. JOHNSON, IN ST. PAUL'S CHURCH-YARD ; AND G. G. AND J. ROBINSON,
IN PATERNOSTER-ROW.

M.DCC.XCVI.

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P R E F A C E.

AMONG the Dictionaries of Arts and Sciences which have been published, of late years, in various parts of Europe, it is matter of surprize that Philosophy and Mathematics should have been so far overlooked as not to be thought worthy of a separate Treatise, in this form. These Sciences constitute a large portion of the present stock of human knowledge, and have been usually considered as possessing a degree of importance to which few others are entitled; and yet we have hitherto had no distinct Lexicon, in which their constituent parts and technical terms have been explained, with that amplitude and precision, which the great improvements of the Moderns, as well as the rising dignity of the Subject, seem to demand.

THE only works of this kind in the English language, deserving of notice are Harris's *Lexicon Technicum*, and Stone's *Mathematical Dictionary*; the former of which, though a valuable performance at the time it was written, is now become too dry and obsolete to be referred to with pleasure or satisfaction: and the latter, consisting only of one volume in 8vo, must be regarded merely as an unfinished sketch, or brief compendium, extremely limited in its plan, and necessarily deficient in useful information.

It became, therefore, the only resource of the Reader, in many cases where explanation was wanted, to have recourse to Chambers's Dictionary, in four large Volumes folio, or to the *Encyclopædia Britannica*, now in eighteen large volumes 4to, or the still more stupendous performance of the French Encyclopedists; and even here his expectations might be frequently disappointed. These great and useful works, aiming at a general comprehension of the whole circle of the Sciences, are sometimes very deficient in their descriptions of particular branches; it being almost impossible, in such
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extensive undertakings, to appreciate, with exactness, the due value of every article : They are, besides, so voluminous and heterogeneous in their nature, as to render a frequent reference to them extremely inconvenient ; and even if this were not the case, their high price puts them out of the reach of the generality of readers.

WITH a view to obviate these defects, the Public are here presented with a Dictionary of a moderate size and price, which is devoted solely to Philosophical and Mathematical subjects. It is a work for which materials have been collecting through a course of many years ; and is the result of great labour and reading. Not only most of the Encyclopedias already extant, and the various publications of the Learned Societies throughout Europe, have been carefully consulted, but also all the original works, of any reputation, which have hitherto appeared upon these subjects, from the earliest writers down to the present times.

FROM the latter of these sources, in particular, a considerable portion of information has been obtained, which the curious reader will find, in many cases, to be highly interesting and important. The History of Algebra, for instance, which is detailed at considerable length in the First Volume, under the head of that Article, will afford sufficient evidence to shew in what a superficial and partial way the inquiry has been hitherto investigated, even by professed writers on the subject ; the principal of whom are M. Montucla, our countryman the celebrated Dr. Wallis, and the Abbé De Gua, a late French author, who has pretended to correct the Doctor's errors and misrepresentations.

REGULAR historical details are in like manner given of the origin and progress of each of these Sciences, as well as of the inventions and improvements by which they have been gradually brought from their first rude beginnings to their present advanced state.

IT is also to be observed, that besides the articles common to the generality of Dictionaries of this kind, an interesting Biographical Account is here introduced of the most celebrated Philosophers and Mathematicians, both ancient and modern ; among which will be found the Lives of many eminent characters, who have hitherto been either wholly overlooked, or very imperfectly recorded. Complete lists of their works are also subjoined to each Article, where they could be procured ; which cannot but prove highly acceptable to that class of readers, who are desirous of obtaining the most satisfactory information upon the subjects of their particular enquiries and pursuits. On the head of Biography however the Author has still to lament the want of many other respectable names which he was desirous to have added

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to his list of authors, not having been able to procure any circumstantial accounts of their lives. He could have wished to have comprised in his list, the lives of all such public literary characters as the University Professors of Astronomy, Philosophy and Mathematics, as well as those of the other more respectable classes of Authors on those Sciences. He will therefore thankfully receive the communication of any such memoirs from the hands of gentlemen possessed of them; as well as hints and information on such useful improvements in the sciences as may have been overlooked in this Dictionary, or any articles that may here have been imperfectly or incorrectly treated; that he may at some future time, by adding them to this work, render it still more complete and deserving the public notice.

As this work is an attempt to separate the words in the sciences of Astronomy, Mathematics, and Philosophy, from those of other arts or sciences, in several of which there are already separate Dictionaries; as in Chemistry, Geography, Music, Marine and Naval affairs, &c; words sometimes occurred which it was rather doubtful whether they could be considered as properly belonging to the present work or not; in which case many of such words have been here inserted. But such as appeared clearly and peculiarly to belong to any of those other subjects, have been either wholly omitted, or else have had a very short account only given of them. The readers of this work therefore, recollecting that it is not a General Dictionary of all the Arts and Sciences, will not expect to find all sorts of words and subjects here treated of; but such only as peculiarly appertain to the proper matter of the work. And therefore, although some few words may inadvertently have been omitted; yet when the Reader does not immediately find every word which he wishes to consult, he will not always consider them as omissions of the Author, but for the most part as relating to some other science foreign to this Dictionary.

In all cases where it could be conveniently done, the necessary figures and diagrams are inserted in the same page with the subjects which they are designed to elucidate; a method which will be found much more commodious than that of putting them in separate plates at the end of each volume, but, which has added very considerably to the expence of the undertaking: where the subjects are of such a nature that they could not be otherwise well represented, they are engraved on Copperplates.

As the whole of this work was written before it was put to the press, the Reader will find it of an equal and uniform nature and construction throughout; in which respect many publications of this kind are very defective, from the subjects being diffusely treated under the first letters of the alphabet, while articles of

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of equal importance in the latter part are so much abridged as to be rendered almost useless, in order that the whole might be comprized in a limited number of sheets, according to proposals made before the works were composed. The present Dictionary having been completed without any of these unfavourable circumstances, will be found in most cases equally instructive and useful, and may be consulted with no less advantage by the Man of Science than the Student.

A M A.