THE

GEORGIAN ERA:

MEMOIRS

OF THE MOST EMINENT PERSONS, WHO HAVE FLOURISHED IN GREAT BRITAIN,

FROM THE ACCESSION OF GEORGE THE FIRST TO THE DEMISE OF GEORGE THE FOURTH.

Volume III : Philosophers and Men of Science

EDWARD WARING.

EDWARD WARING, descended from an ancient family at Milton, in the county of Salop, was born in the year 1734. He received his education at Shrewsbury free-school, and at Magdalen College, Cambridge, where he soon became one of the most distinguished mathematical students. He took his bachelor's degree in 1737, and went through his examination, on the occasion, in such a manner as to be considered a perfect prodigy. In 1759, he was elected Lucasian professor; but the appointment of so young a man to a situation which had been filled by Newton, Saunderson, and Barrow, gave great offence to the senior members of the university. This induced Waring to circulate the first chapter of his Miscellanea Analytica, in vindication of his scientific character, and the consequence was a controversy of some duration. It was commenced by Dr. Powell, master of St. John's, who attacked Waring's production in a pamphlet, which was ably answered by Mr. Wilson (afterwards Sir John Wilson, a judge of the Common Pleas,) in behalf of the subject of our memoir. Dr. Powell replied in 1760; and, in the same year, the degree of M. A. was conferred upon Mr. Waring by royal mandate.

In 1762, appeared the whole of his Miscellanea Analytica, published in quarto, from the university press, with a dedication to the Duke of Newcastle. This work extended his reputation over all Europe: he was elected, without solicitation, member of the societies of Bologna and Gottingen, and received various marks of esteem from the most eminent mathematicians, both at home and abroad. It was written upon the abstrusest parts of algebra, but the author's own words will give the best idea of the nature of this work:—"I have myself wrote," he says, "on most subjects in pure mathematics, and in these books inserted nearly all the inventions of the moderns with which I was acquainted. In my prefaces I have given a history of the inventions of the different writers, and ascribed them to their respective authors, and likewise some account of my own. To every one of these sciences I have been able to make some additions; and, in the whole, if I am not mistaken in enumerating them, somewhere between three and four hundred new propositions of one kind or other, considerably more than has been given by any English writer; and in novelty and difficulty not inferior; I wish I could subjoin, in utility. Many more might have been added, but I never could hear of any reader in England, out of Cambridge, who took the pains to read and understand what I have written. But I must congratulate myself that D'Alembert, Euler, and Le Grange, three of the greatest men in pure mathematics of this or any other age, have since published and demonstrated some of the propositions contained in my Meditationes Algebraicæ or Miscellanea Analytica, the only book of mine they could have seen at that time; and D'Alembert and Le Grange mention it as a book full of interesting and excellent discoveries in algebra. Some other mathematicians have inserted some of them in their publications. The reader will excuse my saying so much, there being some particular reasons which influenced me." These "particular reasons" had, no doubt, relation to the attack which had been made on his scientific capabilities, and are, therefore, a sufficient apology for the egotistical vein in which he vindicates his pretensions to mathematical skill.

Mathematics, however, were not the sole object of the attention of Mr. Waring, who appears to have been intended for the medical profession. After having pursued the study of physic for some time, he took his degree of M. D. in 1767; and, subsequently, attended the lectures and hospitals in London, but it does not appear that he ever enjoyed extensive practice as a physician. For this, other reasons have been given besides his fondness for scientific pursuits, which supplied him with an inexhaustible fund of amusement and occupation. These are, his possession of a very handsome patrimonial fortune, and an embarrassment of manner before strangers, which operated much against his success in a profession, one of the chief requisites of which consists in an engaging address. His Meditationes Algebraicæ, to which he alludes in the quotation we have made from his writings, were published in 1770, at which time he resided at St. Ives, in Huntingdonshire. In 1772, appeared his Proprietates Algebraicarum Curvarum; and, subsequently, his Meditationes Analyticæ, which were in the press during the years 1773, 1774, 1775, and 1776. In the latter year, he married, and went to reside on his own estate at Paisley, about eight miles from Shrewsbury, where he continued to prosecute, with unabated diligence, his mathematical inquiries. A variety of papers, which he had communicated to the Transactions of the Royal Society, procured him, in 1784, the Copleian medal; and, in 1794, he evinced the attention he had paid to studies of a more popular and familiar nature, by printing, though, it seems, he never published, An Essay on the Principles of Human Knowledge. From Paisley, Dr. Waring occasionally proceeded to London, on a visit to the board of longitude, of which he was a member, but seldom remained long in the metropolis. He died in consequence of a violent cold, caught whilst he was superintending the repairing of his house, in August, 1798.

The private character of Dr. Waring was highly respectable; it was marked by inflexible integrity, as well as great modesty. In his manner he was exceedingly simple and plain, yet he was almost looked up to with reverence by those who knew, from his writings, the superiority of his understanding. As a mathematician, he was undoubtedly one of the most eminent of his day; and is, according to his own account, the discoverer of nearly four hundred propositions in the analytics. This, says his biographer, may appear as a vainglorious boast, especially as the greater part of these discoveries, from their abstruse nature, are likely to sink into oblivion; but he was, in a manner, compelled to make it, by the insolence of Lalande, the celebrated French astronomer, who, in his life of Condorcet, asserts, that, in 1764, there was no first-rate analyst in England. Waring replied to this assertion in a letter to Dr. Masklelyne; in which, after mentioning the inventions and writings of several English mathematicians, of whom two were living in 1764, he gives

a full and impartial detail of his own discoveries, many of which were published prior to that year. To use his own words, however, few thought it worth while to read even half of his works; a neglect ascribed, by his biographer, to a perplexity both in the style and manner of his calculations. The reader, it is said, is stopped at every instant, first to make out the author's meaning, and then to fill up some chasm in the demonstration. He must invent anew every invention; for after the enunciation of the theorem or problem, and the mention of a few leading steps, little farther assistance is afforded. His papers which he communicated to the Philosophical Transactions have the same fault, though most of them afford very strong proofs of the powers of his mind, both in abstract science and the application of it to philosophy. They are under the following titles:—Mathematical Problems; New Properties in Conics; Two Theorems in Mathematics; Problems concerning Interpolations; A General Resolution of Algebraical Equations; On Infinite Series; On Finding the Values of Algebraical Quantities by converging Serieses, and demonstrating and extending Propositions given by Pappus and others; On Centripetal Forces; On some Properties of the Sum of the Division of Numbers; On the Method of Corresponding Values; On the Revolution of Attractive Powers; and a second paper On Infinite Serieses.