

**SCIENTIFIC DIALOGUES, INTENDED FOR
THE INSTRUCTION AND ENTERTAINMENT
OF YOUNG PEOPLE: IN WHICH THE
FIRST PRINCIPLES OF NATURAL AND
EXPERIMENTAL PHILOSOPHY ARE FULLY
EXPLAINED. VOL. I. AN MECHANICS**

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Scientific Dialogues, Intended for the Instruction and Entertainment of Young People: In Which the First Principles of Natural and Experimental Philosophy Are Fully Explained. Vol. I. An Mechanics by J. Joyce

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J. JOYCE

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VOL. I. OF MECHANICS.

*"Conversation, with the habit of explaining the meaning of words,
and the structure of common domestic implements to children, is the
sure and effectual method of preparing the mind for the acquirement of
science."* EDGEWORTH'S PRACTICAL EDUCATION.

BY THE REV. J. JOYCE.

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1818.

TO THE HONOURABLE
CHARLES BANKS STANHOPE*,
AND TO THE HONOURABLE
JAMES HAMILTON STANHOPE.

GENTLEMEN,

I AM desirous of prefixing your names to these volumes, in token of the affectionate attachment to which, from me, you are peculiarly entitled. And I am happy in the opportunity which this publi-

* This young man, the second son of the present Earl Stanhope, chose at an early period the profession of arms. In the year 1807 he was appointed aid-de-camp to General Moore, whom he accompanied to Sicily, and afterwards to Sweden. In the latter end of the year 1808, he was, as major, appointed to the command of the 50th regiment, then in Spain, at the head of which he was shot through the heart, at Corunna, on the 16th of January, 1809.

cation affords me of bringing to your recollection subjects, in the study of which you successfully engaged at a very early period of life, and which are of acknowledged importance in the pursuits of every well educated youth.

In perusing this little work you must bear in your minds, that it is not intended for proficients in philosophical knowledge, but for noviciates in science:—not for yourselves in the present advanced stage of your progress, but for those young persons who are unacquainted with the rudiments of natural and experimental philosophy.

I am too well acquainted with the excellence of your dispositions to suppose it necessary for me to apologize for laying before you a work that has no extraordinary claim to your acceptance. You will, I am sure, appreciate its value, not so much by its intrinsic contents, as by the good-will with which it is presented.

DEDICATION.

Before I conclude this short address, permit me to say, that my own happiness will ever be much augmented, by the assurance of the happiness and distinguished usefulness of those with whom I have spent so many years of my life, and to whose permanent interest, I am sure, you will acknowledge I have never been inattentive.

Sincerely wishing you, Gentlemen, all the felicity which the honourable exercise of distinguished talents and virtuous minds can confer upon the possessors,

I subscribe myself,

Your very affectionate Friend,

and obedient Servant,

THE AUTHOR.

CLAPTON, MAY, 1800.

P R E F A C E.

THE Author of these little volumes feels himself extremely happy in the opportunity which this publication affords him of acknowledging the obligations he is under to the authors of "Practical Education," for the pleasure and instruction which he has derived from that valuable work. To this he is indebted for the idea of writing on the subject of Natural Philosophy for the use of children. How far his plan corresponds with that suggested by Mr. Edgeworth, in his chapter on Mechanics, must be left with a candid public to decide.

The Author conceives, at least, he shall be justified in asserting, that no introduction to natural and experimental philosophy has been attempted in a method so familiar and

easy as that which he now offers to the public — none which appears to him so properly adapted to the capacities of young people of ten or eleven years of age; a period of life, which, from the Author's own experience, he is confident is by no means too early to induce in children habits of scientific reasoning. In this opinion he is sanctioned by the authority of Mr. Edgeworth. "Parents," says he, "are anxious that children should be conversant with mechanics, and with what are called the mechanical powers. Certainly no species of knowledge is better suited to the taste and capacity of youth, and yet it seldom forms a part of early instruction. Every body talks of the lever, the wedge, and the pulley, but most people perceive, that the notions which they have of their respective uses are unsatisfactory and indistinct; and many endeavour, at a late period of life, to acquire a scientific and exact knowledge of the effects that are produced by implements that are in every body's hands, or

that are absolutely necessary in the daily occupations of mankind."

The Author trusts, that the whole work will be found a complete compendium of natural and experimental philosophy, not only adapted to the understandings of young people, but well calculated also to convey that kind of familiar instruction which is absolutely necessary, before a person can attend public lectures in these branches of science with advantage. "If," says Mr. Edgeworth, speaking on this subject, "the lecturer does not communicate much of that knowledge which he endeavours to explain, it is not to be attributed either to his want of skill or to the insufficiency of his apparatus, but to the novelty of the terms which he is obliged to use. Ignorance of the language in which any science is taught is an insuperable bar to its being suddenly acquired; besides a precise knowledge of the meaning of terms, we must have an instantaneous idea excited in our minds whenever they are repeated; and, as