

**THE MECHANIC'S AND SCHOOLBOY'S STEPS  
TO THE MATHEMATICS, BEING THE SCIENCE OF  
GEOMETRY ARRANGED ON A NOVEL  
PRINCIPLE, AND EXPLAINED IN THE MOST  
FAMILIAR MANNER, SO THAT IT CAN BE  
EASILY COMPREHENDED BY PERSONS  
STUDYING WITHOUT THE HELP OF A MASTER**

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The mechanic's and schoolboy's steps to the mathematics, being the science of geometry arranged on a novel principle, and explained in the most familiar manner, so that it can be easily comprehended by persons studying without the help of a master by John Quedsted

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**JOHN QUESTED**

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MECHANIC'S AND SCHOOLBOYS  
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BEING

THE SCIENCE OF GEOMETRY

ARRANGED ON A NOVEL PRINCIPLE,  
AND EXPLAINED IN THE MOST FAMILIAR MANNER, SO THAT IT CAN BE  
EASILY COMPREHENDED BY

PERSONS STUDYING WITHOUT THE HELP OF  
A MASTER;

AND WILL BE FOUND EQUALLY USEFUL TO THE TEACHER,  
IN INSTRUCTING HIS PUPILS.

BY

JOHN QUESTED

AUTHOR OF THE "ART OF LAND SURVEYING," "A TREATISE  
ON RAILWAY SURVEYING AND LEVELLING."



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## PREFACE.

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WHEN we reflect on the multitude of works extant on this subject, it may appear both presumptuous and unnecessary, that the Public should be encumbered with another, and that other laying claim to no pretensions of new and important facts, setting no disputed point at rest;—in short, not introducing a Problem which may not be met with in other works. Still the compiler\* trusts that it may receive encouragement. He has endeavoured to write it in a clear, and unostentatious style, that it may be easily understood by the student, without having recourse to a master; and the arrangement, he hopes, is such, as to give the pupil every facility.

\* I prefer the word *Compiler*, for it certainly would be arrogating to myself a credit ill deserved, to say *Author*, inasmuch as, following the beaten track of my Predecessors, I cannot fail using both their words and definitions; and, let who will write on this subject, he becomes, *Nisiens volens*, a Plagiarist. Much of the idea of the arrangement is derived from an old work which fell into my hands some time ago; and he, from whom I have plucked a feather, took his plumage from a French Bibed of the genus Euclid.

It has been frequently remarked by young students, that the instructions how to work a problem, are often confused; and much of the confusion arises from the letters of reference, A, B, C, &c., following consecutively, in the line of type; careless pupils, therefore, not paying attention to the punctuation of the rules, confound themselves. This, the compiler has endeavoured to correct, by *giving to each distinct operation and reference to the diagram, a separate line; and by placing the letter or letters referring to the diagram, on the right hand*, so that they may attract the eye immediately. On the left hand margin, are placed figures relating to pages, in other parts of the work, containing some remarks on the subject treated of;—for example, on Page 16 opposite the words “Bisect the line, C *d*,” stand the figures 18, and the student by turning to page 18 will find instructions how to bisect a line.

Those who have, like the writer, been employed in the instruction of youth, have doubtless, frequently remarked the difficulty which boys experience in retaining the technical words and phrases. Unless they have some knowledge of Greek and Latin, (from which languages the greater part of these words are derived) they can trace no affinity, and consequently can see no reason, for certain geometrical figures, having such apparently odd names. The Greek language, being in itself so comprehensive, one word often expressing what would require several to convey the same meaning in English, Geometricians



have retained the original words, or have rather *Anglicised* them.

Imagining that some facility may be afforded to the learner, the compiler has appended a Glossary, in which the derivation and meaning of many of these words may be found; and by which the pupil may see, that strange as they may sound to his ear, the signification, nay, the very description of the figure or operation, is in the original word fully explained.\*

Some of the remarks may appear simple and unnecessary, to those who have previously studied this science; but, on reflection, even they, may perhaps remember, that, while studying, with the fear of the ferule before their eyes, they have been sorely puzzled by what may now be clear and easy of comprehension to them. It should also be borne in mind, that this little work is not written for the proficient; but as a means, for the beginner, to arrive at proficiency by preparing his mind for more erudite and elaborate works. There is one class of people in particular, to whom the writer cherishes the idea that his efforts

\* The writer begs to tender his acknowledgements to his friends for their assistance in the Glossary, without whose valuable aid he could not have compiled it.

Such is the *march of intellect*, and such the rage for display, that the writer is often amused by reading advertisements of new inventions, in which patentees delight at once to puzzle and astonish the public. In the "Times," of this day, after several advertisements headed "Panklibanon," in which are introduced the classic name of "Purdonium," for a *coal scoop*, the patent Thermic stove &c., follows one, commencing with the astounding word Anhydrohepsterion, or a *Machine to cook potatoes*. If our language be so destitute of words, as not to afford one for a mere cooking apparatus, surely we cannot wonder at Geometricians retaining the original words, of a science, which owed its birth to the men who spoke the Language, in which the definitions are handed down to us.

may be of service. He alludes to the Mechanics, that class who were formerly of opinion, that

"Where Ignorance is bliss,  
'Tis folly to be wise."

but among whom, there is now engendered a desire to improve their mental faculties, and by that moral force, elevate themselves from the most degrading slavery,—the slavery of ignorance, the nearest approximation to the brute creation. While this laudable emulation is daily extending, while the Mechanic, who toils with the implements of his handicraft, is searching into the more hidden mysteries of his calling,—himself, asking the "Why," and seeking the "Because" of certain results; while he is in truth, enjoying the real "feast of reason;"—while he attends the Institutions which he himself contributes to support, for the purpose of self-instruction,—we may hope, with confidence, to find that improvement in his moral and social station, which truly makes a nation great. And it is to that useful, and now intelligent class, these pages may be found adapted.

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