

**EXPLANATORY
MENSURATION FOR
THE USE OF
SCHOOLS, PP. 1-145**

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Explanatory Mensuration for the Use of Schools, pp. 1-145 by Alfred Hiley

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ALFRED HILEY

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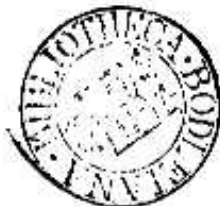
EXPLANATORY
MENSURATION
FOR
THE USE OF SCHOOLS.

CONTAINING NUMEROUS EXAMPLES, AND (BY THE KIND
PERMISSION OF THE OXFORD DELEGATES) EMBODYING NEARLY ALL THE
QUESTIONS SET IN THEIR LOCAL EXAMINATION PAPERS.

BY THE

REV. ALFRED HILEY, M.A.

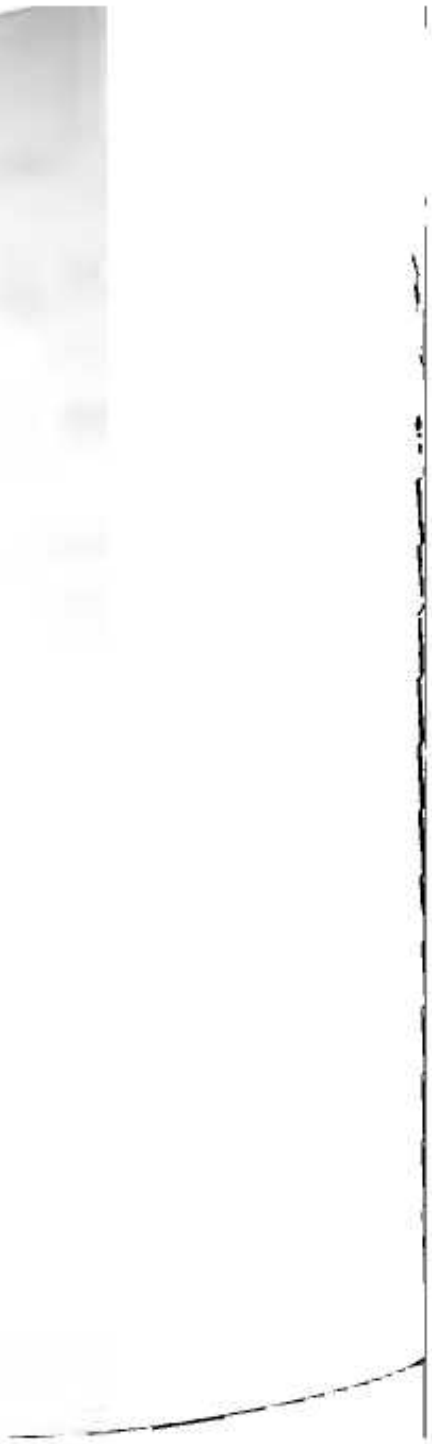
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PREFACE.

So NUMEROUS are the purposes to which Mensuration is applied, that it would be almost impossible to exaggerate its importance.

To many boys also, whose time for instruction is likely to be limited, or who, perhaps, would find Euclid too difficult for them, it is believed that Mensuration would form an excellent substitute.

But, important as Mensuration doubtless is, still, in the opinion of many Masters, the works that have recently appeared on this subject are *too long* to be used as ordinary School Books. Acting on this impression, the Author has endeavoured to supply a work on Mensuration which a boy of ordinary ability could hope to get through within a *reasonable* time.

The Questions, which number about 700, are, for the most part, original; but, by the kind permission of the Oxford Delegates for Conducting the Local Examinations, nearly all the questions that have appeared in their Examination Papers have been embodied in the present Work.

This feature of the Work will doubtless prove most useful, as it will show candidates for these Examinations what is the *style* of question that they may expect—those that have appeared in the Junior Examination

Papers being marked by a single asterisk (*), whilst those that have been set to the Senior Candidates have prefixed to them a double asterisk (**).

Whilst framing the Questions with the express intention of impressing the different rules upon the Student's mind, care has been taken to avoid wearying him with long and tedious *Arithmetical* calculations.

But *before* commencing Mensuration, it is desirable that the Pupil should be well grounded in his Arithmetic, so that his onward course may not be impeded by his ignorance of any particular rule that he may require.

The explanations have been made as clear and as simple as possible, and will be sufficient, it is hoped, to enable the Pupil to work nearly all the Questions without much help from his Master.

Of course, in a work of this kind, containing so many questions, there will necessarily be some mistakes, but it is hoped that they will be found very few indeed, as the greatest care has been taken to make it as correct as possible.

Any corrections, however, or suggestions for its improvement, will be most thankfully received by the Author.

A. HILEY.

THORP-ARCH SCHOOL, YORKSHIRE:

June 20, 1871.

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MENSURATION.



DEFINITIONS.

I. Mensuration enables us to find the length of lines, the area of surfaces, and the volume of solids.

II. A point in Geometry is considered as having neither length, nor breadth, nor thickness.

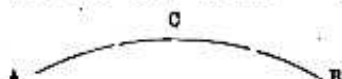
III. A line has length, but is considered as having neither breadth nor thickness.

IV. Lines may be either straight, curved, or parallel.

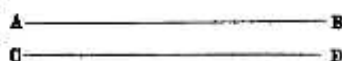
V. A straight line, such as AB , lies evenly between its extreme points A and B ; or it may be defined to be, the shortest distance between its extremities.



VI. A curved line, as ACB , is one that is continually changing its direction; or is a line in which no part of it is straight.



VII. Parallel lines are those which always remain the same distance from each other, however far they may be produced.



VIII. A superficies or surface has length and breadth only; and it is called a *plane* superficies if it is perfectly even or level—such as the top of a table, or a well-laid floor. There are surfaces which are not even or level, such as the curved surface of a globe.