ELEMENTARY HYDROSTATICS

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W. H. BESANT

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ELEMENTARY HYDROSTATICS

BY

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TENTH EDITION REVISED.

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1882

PREFACE.

I HAVE endeavoured in the following treatise to place before the student a complete series of those propositions in Hydrostatics, the solution of which can be effected without the aid of the Differential Calculus, and to illustrate the theory by the description of many Hydrostatic Instruments, and by the insertion of a large number of examples and problems.

In doing this I have had in view the courses of preparation necessary for the first three days of the Examination for the Mathematical Tripos, for some of the Examinations of the University of London, and for various other Examinations in which more or less knowledge of Hydrostatics is required.

As far as possible the whole of the propositions are strictly deduced from the definitions and axioms of the subject, but it is occasionally necessary to assume empirical results, and these assumptions are distinctly pointed out. I have thought it advisable to give a slight account of some cases of fluid motion, and also to give an explanation of some of the more important phenomena of sound; in each of these cases I have assumed, as the basis of reasoning, certain facts which can be deduced from theory by an analytical investigation, but which it may be useful to the student to accept as experimental results.

The Geometrical facts which are enunciated at the end of the Introduction are such as can be demonstrated without the aid of the Differential Calculus.

By Professor Miller's kind permission, I have been allowed to make use of the Chapter on Instruments in his Hydrostatics: of this permission I have availed myself in many cases, and, in particular, I am entirely indebted to Professor Miller for the descriptions of the Piezometer and Stereometer, and for information and references having regard to those instruments.

The slight historical notices appended to some of the Chapters are intended to mark the principal steps in the progress of the science, and to assign to their respective authors the exact values of the advances made at different times.

I have given, in most cases, the answers to the examples and problems, and these will, I hope, sufficiently illustrate the subject, and form for the student a collection of useful and instructive exercises.

W. H. BESANT.

St John's College,
April, 1863.

PREFACE TO THE TENTH EDITION.

In the present edition the text has been carefully revised, a chapter on Capillarity has been inserted, and other additions have been made. I venture to hope that these additions will be an aid to the Student and will increase the utility of the treatise as a Textbook.

W. H. BESANT.

St John's College,
April 1882.

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