

"vertical indices" receives special attention, and a section on defilade—a subject not much studied in this country—cannot fail to be of use and interest to those who study the science of war. E. D. A.

#### OUR BOOK SHELF.

*Examples in Physics.* By D. E. Jones, B.Sc., Lecturer in Physics at the University College of Wales, Aberystwyth. (London and New York: Macmillan and Co., 1888.)

So many books have been written having titles similar to if not identical with that quoted above, the only object of which seems to have been to enable students to pass certain examinations with the minimum of knowledge, that it is a comfort to turn to one against which no such charge can be made. Mr. Jones's "Examples in Physics" has not been written "up to" any Syllabus, but the author has made use of portions of the manuscript in teaching classes of students taking the intermediate science and preliminary scientific courses of the London University, and he believes it will be found useful for students who are preparing for these examinations. There can be no doubt that the book will be of great assistance in this way, owing to the large number of examples and the excellent way in which they have been graduated. In addition to the examples, of which there are more than a thousand, with occasional hints for their solution, there are short explanatory chapters and paragraphs where experience has shown that they are needed. Thus, at the beginning, the C.G.S. units are thoroughly explained, as is the method of passing from one system of units to another by means of dimensional equations. Those approximate relations which are most often made use of are shown to be true, and examples illustrating the advantage of employing them are worked out. The method of using logarithms is explained, and both on pp. 19 and 21 the reader is told that there is a table of four-place logarithms at the end of the book. There is a page on which natural sines and tangents are given to three places, but not a vestige of a logarithm is to be found.

In the chapters on dynamics, hydro-statics, heat, light, sound, electricity, and magnetism, chapters which consist essentially of examples, there are clearly-written paragraphs explaining those points that do not generally seem to be grasped by students. The answers to the questions are given at the end.

The general arrangement of the book is particularly happy; it is clearly the work of a teacher whose object is to increase the real knowledge of his students, and not merely to drive them through the ordeal of an examination.

*The Constants of Nature.* By Frank W. Clarke. Part I. New Edition. (Washington: Published by the Smithsonian Institution, 1888.)

THIS volume consists of a series of tables of specific gravities of solids and liquids, and differs from the older edition in two respects. In the first place, the tables have been revised and greatly enlarged; and, secondly, melting and boiling points have been omitted, on the ground that they are already supplied by the two volumes by Prof. Carnelley, which are specially devoted to those data. How much the tables have been enlarged may be gathered from the fact that the older edition, with a later supplement, only gave 2963 substances, whereas there are now no less than 5227 distinct substances mentioned, and 14,465 separate determinations. As the author remarks, this increase is a noteworthy indication of chemical activity.

The tables are only intended to be complete as far as artificial substances of definite constitution are concerned,

but, in addition to these, many minerals find places. For each substance, the formula, specific gravities, and authorities are stated. The elements take the first place, and these are arranged in order of densities. Then follow inorganic fluorides, chlorides, bromides, iodides, oxides, sulphides, &c., the various groups of organic bodies coming last. There is a very complete index to the names of substances, without which, of course, the book would be far from complete.

The author is to be congratulated on the successful completion of an undertaking entailing such a vast amount of patient labour.

#### LETTERS TO THE EDITOR.

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Gresham College.

I TRUST you will allow me space for a short note upon Prof. Lankester's article in last week's issue of NATURE (p. 1), under the above heading. I have no intention of entering into a controversy with Prof. Lankester upon matters of opinion, but I am desirous of correcting statements, made by him in that article, which are inaccurate. In point of fact, the article is based entirely upon a misapprehension as to the purpose and function of the London Society for the Extension of University Teaching, and its position with regard to Gresham College. Prof. Lankester speaks of it as a Lecture Society, and refers to the "innumerable short courses" of lectures given in different halls, Vestry Halls, and others in London. He is evidently here confusing two distinct things. The short courses in large halls are given under the People's Lectures Scheme, which is an entirely different matter, and in connection with which we never use the word "University." The courses of lectures and classes carried on by the London Society and the Universities Joint Board involve a systematic course of work extending over a full term of ten or twelve weeks. It is a part of the same great movement which is carried on by the University of Cambridge (not by a Lecture Society), and more recently also by the University of Oxford, in different parts of the country.

Those who have had an insight into the methods and the result of the working of the University Extension movement have been struck with the excellence and thoroughness of the work done. Sir James Paget, in his annual address to students at the Mansion House, last February, spoke as follows with regard to some of the syllabuses:—

"As I looked through the syllabuses of such subjects as I can estimate, I could see that the amount of teaching in each of them is enough for a good beginning for some who may intend to make that subject a chief study for their lives, and enough to form an important part in the teaching of anyone who wishes to be in the fairest sense generally well educated."

In fact, the principles which underlie the University Extension movement cannot but meet with the approval of all interested in higher education. These principles are, "first, that the amplest facilities for the best kind of higher teaching, such as the Universities provide, should be brought within the reach of the great mass of the people by means of courses of instruction, given locally at convenient times and places; and, secondly, that a teaching system, as opposed to a mere examination system, is required to meet the educational needs of the time."

In his speech at Gresham College, Mr. Goschen made no claim that "Gresham's money should be assigned to the support of the lecturers of the Society." What he did point out was that the design of Sir Thomas Gresham was to establish, in the heart of London, University teaching for busy people engaged in the City, and that the aim of the University Extension movement, whether in London or the country, was in spirit the same.

Prof. Lankester charges this Society with making an objectionable use of the word "University" in order to gain financial support. He says, "the implication is that the teaching is such as is given at the Universities, and it is an entirely false implica-