OUR BOOK SHELF.

The Elements of the Science of Nutrition. By Prof. Graham Lusk. Pp. 326. (Philadelphia and London: W. B. Saunders Co., 1906.) Price 12*s.* net.

PROF. GRAHAM LUSK is to be congratulated on having produced a very interesting and important book. The author is an investigator imbued with the true scientific spirit, and his work has always been characterised by thoroughness and sincerity. The introductory chapter is a very lucid exposition, not only of the history of research on the subject of metabolism or nutrition, but it also gives an excellent summary of the nature of the problems to be attacked, and the main results hitherto obtained. This chapter alone entitles the book to high distinction, but the subsequent chapters which fill in the details of the picture maintain the high standard of the beginning. The reader will find here a mine of useful information, and will easily comprehend the facts in their relation to each other, so clearly and exhaustively are they dealt with.

The English reader will be able to study for the first time in his own language the epoch-making work of Rubner, who has, among other points, directed attention to what he terms the specific dynamic value of the foodstuffs; fat outside the body is the most readily combustible of the proximate principles of food, and weight for weight yields more than twice the number of calories which proteids give rise to. Fat has, of course, the same calorific value when it undergoes combustion within the body, but it is inferior to the proteins as a heat generator, because it is burnt with so great difficulty there. The proteins are the most readily burnt of all the foodstuffs, and this property of stimulating metabolism constitutes their specific dynamic value. In the discussion now in progress on the amount of protein food which is necessary, a question raised by the recent work of Chittenden and his colleagues, this factor is one which must not be lost sight of.

The book not only deals with metabolism in health, but also in diseased conditions (gout, diabetes, phosphorus poisoning, fever, &c.) This makes the work very comprehensive, for it is just in these questions of nutrition that physiologists and pathologists may mutually learn so much by a correlation of their respective spheres of study. In the chapter on diabetes, one notes the following sentences:—

"No disease has been more thoroughly investigated. In presenting the details to the reader, it may be remarked that the work done is prophetic of possible accomplishment along scientific lines in the study of disease. It is typical of that scientific medicine which affrights the devoted spirits of a passing empiricism."

Prof. Lusk evidently speaks with feeling, and has perhaps suffered from the passive resistance of the conservative "devoted spirits" to whom he alludes. If anything will move them, it will be study of such books as the one we are dealing with.

The book is very appropriately dedicated to Carl von Voit, the pioneer of such work, and the author's old master. W. D. H.

Physical Chemistry for Electrical Engineers. By J. Livingston R. Morgan. Pp. viii+230. (New York: John Wiley and Sons; London: Chapman and Hall, Ltd., 1906.) Price 6*s.* 6*d.* net.

THIS book has been written not only for the professional electrical engineer, but also for the use of those who desire to obtain a knowledge of physical chemistry sufficient in its scope for the understanding of current work in electrochemistry. The subject-matter is divided into seven chapters, which treat respectively of fundamental principles, the general properties of gases, heat and its transformation into other forms of energy, solutions, chemical mechanics, equilibrium in electrolytes and electrochemistry. An eighth chapter is devoted to a series of problems.

In the method of presentation the standpoint of the now fashionable cult of "anti-atomists" has been adopted, the author's opinion being "that by placing the subject upon a purely experimental basis, giving a practical experimental definition of each concept as it is used and drawing no inference not justified in all its parts by actual results, the reader's idea will be the more clear and scientific." This is distinctly unfortunate, for nothing is gained by the non-recognition of the atomic and molecular hypotheses. The services rendered by the hypothetical atom are too enormous for the concept to be discarded on purely pedantic grounds. Apart from this, the detailed treatment of the subject-matter is good, and the chemical student will find the book interesting reading. It is scarcely to be expected, however, that its contents will be understood by the professional electrical engineer. No doubt a knowledge of physical chemistry is essential for the engineer who would understand the working of storage batteries and the recent developments in electrochemical industry, but when the training of the electrical engineer in this country is considered, the possession of the chemical knowledge requisite for an intelligent reading of Prof. Morgan's book is scarcely to be expected. H. M. D.

The Technical College Set of Mathematical Instruments. No. 727. (London: W. H. Harling.) Price 2*l.* 2*s.*

THERE is great diversity of opinion as to the most suitable case of drawing instruments for students, many colleges having their own particular specifications; but it would be difficult to find a more desirable set of instruments than this of Mr. Harling, on account both of the judgment displayed in the choice of the instruments and the design and workmanship exhibited. In the neat pocket case will be found a 4-inch bow compass, with pen and pencil fittings and lengthening bar; a 5-inch hair divided; three spring bows; two drawing pens; a pricker; keys, spare leads, and needles. The instruments are of the best English design and finish, with knee joints and nut and bolt needle points where necessary.

A student who possesses this case of instruments is so far well equipped for his work in drawing and graphics, and gets exceedingly good value. The instruments can be highly recommended as being entirely suited to their purpose.

A Second German Course for Science Students. By Prof. H. G. Fiedler and F. E. Sandbach. Pp. vii+76. (London: A. Moring, Ltd., 1906.) Price 2*s.* 6*d.* net.

IN a former volume, favourably noticed in NATURE of May 24, 1906 (vol. lxxiv., p. 78), the authors described a series of simple lessons in science suitable for reading by elementary students of the German language. The present volume contains extracts from recent German scientific publications—books, periodicals, and proceedings of societies—of a more technical character, but arranged, so far as possible, in order of difficulty. Some notes on unusual words and phrases, hints on the use of a dictionary, a grammatical summary, and a list of abbreviations provide all the assistance the reader is likely to require at this stage. The extracts have been carefully selected, and will be read with interest and profit by students of physics and chemistry who have a slight knowledge of German.