

proteins, does not give rise to putrefactive products which are the basis of auto-intoxication, so that the diet in this sense is an ideal one. It is interesting to note that the author has tried again and again a strictly vegetarian diet, but does not find it so satisfactory as those mentioned. Making allowance for the author's enthusiasm and special pleading, we may conclude that there is "something in it."

(3) The first edition of this book was noticed in NATURE of January 21, 1909. The author, by adopting a series of exercises carried out in bed, claims that he became a rejuvenated individual. As we said regarding the first edition, we think that the author has devised a system of physical exercises which, if carried out, would be of considerable benefit to those who, either from necessity or inclination, lead a sedentary life.

R. T. HEWLETT.

OUR BOOKSHELF.

Lectures delivered at the Celebration of the Twentieth Anniversary of the Foundation of Clark University, under the auspices of the Department of Physics. By Vito Volterra, Ernest Rutherford, Robert Wm. Wood, and Carl Barus. Worcester, Mass., September 7-11, 1909. Pp. vii+161. (Published by Clark University; New York and London: G. E. Stechert and Co., 1912.) Price 10s. net.

THE system of holding conferences at which a number of lectures are given by eminent specialists is a noticeable feature of American universities, and is being adopted with success in other countries. Clark University was founded in 1889, and under the invitation of its Department of Physics courses of lectures were given to celebrate its twentieth anniversary. Those published in this volume are by Prof. Vito Volterra on recent progress in mathematical physics (in French), by Prof. Rutherford on the history of the alpha rays, by Prof. R. W. Wood on optical properties of metallic vapours, and by Prof. C. Barus on physical properties of iron carbides. Other lectures by Profs. Michelson and E. F. Nichols are not published. The volume will be of interest to those who attended the conferences or who desire a not too extensive summary of our knowledge in the branches of study covered by the lectures.

Magnetochemie. Beziehungen zwischen magnetischen Eigenschaften und chemischer Natur. By Prof. E. Wedekind. Pp. viii+114. (Berlin: Gebrüder Borntraeger, 1911.) Price 3 marks.

THE subject of this monograph is one which has attracted considerable attention within recent years. It is, as the title implies, the study of the relation between magnetic quality and chemical composition. The author begins with a short sketch of the methods of magnetic measurement, which is useful and no doubt sufficient for his purpose, although it is not free from blemishes

which one might desire to see removed. For instance, the diagrams on pp. 7 and 10 are extremely rough, and even misleading. Then follows an account of the ferromagnetic substances, and after this the magnetism of dissolved salts is described. Paramagnetism and diamagnetism are then dealt with, and the book concludes with a sketch of the "magneton" theory.

The descriptive parts are good and extremely useful as a record of modern work and progress; but the book is essentially qualitative in character and contains little in the way of exact analysis of the results which have been obtained. The work will be valued by those engaged in research upon the subject, and also by those wishing to obtain some general acquaintance with it. We have, unfortunately, too few books of this character in our own language.

The Teachers' Book of Constructive Work for Elementary Schools. By Ed. J. S. Lay. Pp. xii+142. (London: Macmillan and Co., Ltd., 1912.) Price 3s. 6d. net.

EACH year now sees more attention given to school exercises in the various subjects of the curriculum which demand the employment of the hands as well as the brains of the children. Teachers of experience understand that young pupils learn best by doing, and this view gains ground everywhere. Mr. Lay in this book describes for the benefit of other teachers how he has succeeded in giving reality to lessons in arithmetic, history, geography, and so on, by constructive work of an interesting kind, so graduated that the method may be employed with children from five to fourteen years of age. The book may be commended to the notice of schoolmasters and schoolmistresses as an example of what can be done with very little expenditure to make elementary education less bookish and unreal.

LETTERS TO THE EDITOR.

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Forced Vibrations.

IN his letter on the above subject in NATURE of June 27, Prof. Perry examines some typical dynamical and electrical solutions of the equation

$$(D^2 + 2kD + n^2)x = A \cos pt \dots (1)$$

with special reference to the critical case of maximum amplitude of the forced vibration; he shows that in all the cases examined the critical value of p which excites maximum response is either n or $\sqrt{n^2 - 2k^2}$, while the frequency of the free damped vibration is given by $\sqrt{n^2 - k^2}$, and concludes that the usual statement is not correct that for maximum response "the forcing influence ought to be in tune with the natural frequency of the system." But is it usual to define the natural frequency of the system as $\sqrt{n^2 - k^2}$? The term is ordinarily employed, like the