

round corners which look as if they were sharp angles, is so strikingly unlike anything which can be realized (and the results explained in this section can to a great extent be experimentally realized), that the diagram becomes at least misleading. If the corners are sharp by intention, then the diagram is absolutely wrong.

In spite of the faults and defects we have been obliged to notice, this book is, as we have said, an admirable attempt at a very worthy object, and with some remodeling it can be made into an excellent text-book. We wish it all success, feeling well satisfied that it meets a decided want.

#### OUR BOOK SHELF.

*The Dietetic Value of Bread.* By John Goodfellow, F.R.M.S. (London: Macmillan and Co.)

THIS book is another addition to the useful series of "Manuals for Students," published by Messrs. Macmillan and Co. The author states in his preface that the object of the work is twofold. First, to lay before the general public an account of the various kinds of bread, by which their merits may be judged; and, secondly, to afford technical information to students and others on the important subject of the true value of bread as a food. These objects have in every way been fulfilled. No one is more qualified to write such a book than Mr. Goodfellow, who by his previous writings has shown such a grasp of the subject with which he has to deal.

The first section of the volume is concerned with "Food, Diet, and Digestion." This is a very difficult matter to treat in a popular manner. It involves some of the most complicated problems of physiology. The author, however, has not shirked his task; anyone, however ignorant he may formerly have been on the processes by which food matters are rendered suitable for absorption and after-use by the human organism, if he reads through these pages carefully, cannot but help gaining much knowledge on the functions of the stomach and intestinal canal, and of the waste and work of the body.

The nature of the digestive fluids is not, of course, considered with the minuteness of detail necessary for a medical examination, but enough is said to render the following sections perfectly intelligible, although they are treated in a scientific manner.

"White Bread" is first considered. An introductory chapter is given describing the structure of the wheat grain, and the changes which flour undergoes when exposed to heat and the process of fermentation. Not only are the chemical and physiological properties of bread considered, but economical principles are gone into, and it is shown "that bread is one of the cheapest foods, not only with regard to the actual weight of nourishment obtained, but also with regard to the variety of the nutrient constituents; and the purchaser who expends his modest 2½d. in a 2-lb. loaf may rest assured that he could not spend his money to better advantage."

We further learn, however, that white bread is not a perfect food; those who partake of it should take care to supplement it largely with other foods, in order to make up for the lack of calcareous matter. On no account should it form part of the diet of children unless supplemented by milk or other foods rich in lime and phosphates.

Turning to "Whole-meal Bread," full descriptions are given of its composition, amount and nature of the salts present and their solubility; its digestibility, the waste present, and the action of bran on the intestine; its flavour, satiety, and dryness; and its effects on infants and children.

The ordinary whole-meal bread is not a desirable food,

and far inferior to good white bread as regards the weight of actual nourishment and the thoroughness of the digestion. Its ingestion is often followed by diarrhoea, and the action of the bran increases the waste of food.

After a short consideration of some special forms of bread, such as "aërated," "bran," "rye" bread, &c., Mr. Goodfellow proceeds to speak of Meaby's Triticumina bread, of which he has a very high opinion, and believes that it is as near a perfect food as such a bread can be, and deserves the universal commendation which has been accorded to it by the medical and analytical world. "Germ," "diastase," "gluten" bread, &c., are then described, and the book finishes with short chapters on the diseases of bread and its medicinal properties.

To all who are interested in this subject, or wish to extend their knowledge of "the staff of life," we heartily recommend this volume.

*Graduated Mathematical Exercises.* Second Series. By A. T. Richardson, M.A. (London: Macmillan and Co., 1892.)

ON a previous occasion we have referred to the first series of exercises by Mr. Richardson. In these he led the student through a set of graduated examples, commencing with arithmetic and reaching those on cube root, compound interest, and quadratic equations.

In the present series, which is intended to be a continuation of the first, the relatively higher flights of mathematics have been dealt with. The problems have been arranged on the same lines, the more difficult of them being reached as advance is made, and include those on algebra, logarithms, trigonometry, mechanics, and analytical geometry.

An idea of the range over which each subject spreads can be gathered from the fact that all the problems will about suffice to cover such examinations as those of the Oxford and Cambridge Locals, and Army and Navy, allowing a small margin of safety.

Great care seems to have been taken to insure accuracy, every example having been worked out at least twice. For class work these examples will be found handy and a great saving of time, while for use at home the book should be widely employed.

*Bibliothek des Professors der Zoologie und vergl. Anatomie, Dr. Ludwig von Graff, in Graz.* (Leipzig: Wilhelm Engelmann, 1892.)

PROF. VON GRAFF is the lucky owner of a fine scientific library, which was formed mainly by Carl Theodor von Siebold, his father, and his grandfather, all of whom were professors. This library came into the possession of Prof. von Graff in 1882, and as it was too large for the modest dimensions of a German professor's house, he exchanged many books relating to practical medicine for zoological monographs and periodicals. At Graz the library is freely used by his assistants, pupils, and colleagues, and it is mainly for their benefit that the present catalogue has been issued. It consists of 337 closely printed pages, and is a compilation of considerable value, not only because it gives lists of authors and their works, but because of the admirable way in which the lists are arranged. The contents of the library are grouped under four headings—periodicals, auxiliary books (including works on University systems, bibliographical writings, dictionaries, &c.), *zoologia generalis*, and *zoologia specialis*.

*The Canadian Guide-book.* By Charles G. D. Roberts. (London: William Heinemann, 1892.)

TOURISTS and sportsmen in Canada ought to be very much obliged to Mr. Roberts for having provided them with this excellent Guide-book. The method he has adopted is that of Baedeker's Hand-books, and the result is in every way worthy of the models he has chosen. The work includes full descriptions of routes, cities, points of