

of roses, leaf-spot (*Septoria rosae*) and tumour (*Botryosphaeria diploida*) are not given. This part of the book might have been condensed with advantage. Dr. Schwartz has a more extensive task in describing the insect pests, of which more than a hundred are known. About fifty species are shortly described and tabulated according to the parts of the plants which they injure. The data given are as full as could be expected, and remedies are mentioned.

OUR BOOK SHELF.

Exercises in Metal Work. For Trade Preparatory Schools. By A. T. J. Kersey. Pp. x+70. (London: G. Bell and Sons, Ltd., 1910.) Price 1s. 6d. net.

TWENTY-SEVEN exercises in detail are contained in this book, and hints for continuing thereafter a course in metal-work suitable for pupils in trade preparatory schools. The exercises are carefully graduated, at first introducing the use of hand tools, and leading up to some simple exercises in the use of machine tools, such as drilling machines, shaping machines, and turning lathes. The drawings are good, and show in every case what is required of the pupil. Some little omissions occur here and there; for example, on p. 53 appear drawings of a V block as an example of the use of a shaping machine. It is customary to have a groove at the bottom of the V in order to facilitate finishing its faces; this has been omitted. It is not, however, a grave objection to find such details left out; students possessed of average intelligence will discover them, and, judging from the preface, it is more than probable that the author had this view before him in the production of the book.

We can commend heartily the reading of the author's preface to any teacher or other person having an interest in workshop classes. The value of a sympathetic teacher cannot be over-estimated; it is often difficult for an instructor who has been trained in an engineering works (and this is essential) to realise the difficulties of the boy who has just left the elementary school. Unless he bears in mind the mistakes and troubles of his own early apprentice days, he is apt to be impatient. Pupils should be encouraged to think out answers to home-work questions. Those appearing in the book are designed with the view of cultivating the spirit of inquiry and of teaching pupils to think about their work, as mere manipulative skill is of little value without this—the true aim of all education, technical or otherwise. We can commend this book as an intelligent attempt to assist in carrying out these broad-minded principles.

A Lecture on Mendelism. By Dr. H. Drinkwater, F.R.S. Pp. iii+31. (London: J. M. Dent and Sons, Ltd., 1910.)

In this book is given a popular lecture on Mendelian heredity, printed apparently with hardly any alteration; and considered as a lecture it is distinctly good. It is very simply and clearly written, and with the help of the numerous diagrams and figures should make the main outlines of the subject clear to those who have no previous acquaintance with it. It has, however, the unavoidable defect of a lecture, that to avoid confusion essentials must be emphasised to the exclusion of the less important; it would probably have been improved by the addition of footnotes in some places, amplifying or qualifying the statements in the text. For example, the inference (p. 21) that "*plants and animals are built up of a number of indivisible unit factors upon which their characters*

depend" (author's italics) surely requires a qualifying note to the effect that such unit factors may equally possibly be superposed on a basis which is different in nature.

The figures and diagrams are mostly clear and good, and there are well-reproduced portraits of Profs. Bateson and Punnett, in addition to a frontispiece of Gregor Mendel. The representation of a wrinkled seed in Fig. 5 is misleading, and the figure on the last page, illustrating the union of germ-cells, besides being rather obscure without further explanation, contains an inaccuracy in reproduction which might be confusing. Other small points which could be improved are the explanation of the 3:1 ratio, and the use of the symbols Fj, Fij, instead of the conventional Fr, Fz. We have perhaps unduly emphasised the small defects in what should prove an excellent introduction to the subject for those who read of it for the first time.

L. D.

The Application of Logic. By Alfred Sidgwick. Pp. ix+321. (London: Macmillan and Co., Ltd., 1910.) 5s. net.

"THROUGHOUT this book 'formal' logic is identified not only with the logic which expressly calls itself formal, or 'deductive,' but with any logic which, like the ordinary 'inductive' logic, is, in fact, more formal than it professes to be. Wherever actual application and its difficulties are ignored, there is formality of a harmful kind."

Accordingly, Mr. Sidgwick discusses such matters as the ground of an inference, causal inquiries, ambiguity, indefiniteness, error, begging the question, distinction and definition, and the like, making constant use of well-chosen illustrative cases, and writing always in attractive and lucid style. There is some good protestation against slovenly modern usage of words. Why should "transpire" be allowed to mean "happen," "phenomenal" to mean "extraordinary"? We are much to blame in this; 'tis too much proved.

On general counts, Mr. Sidgwick views his subject from the point of view of Dr. F. C. S. Schiller.

Vergiftungen durch Pflanzen und Pflanzenstoffe: ein Grundriss der vegetalen Toxikologie für praktische Aerzte, Apotheker und Botaniker. By Dr. F. Kanngiesser. Pp. iv+49. (Jena: G. Fischer, 1910.) Price 1 mark.

THIS little work deals in a very concise form with the toxic nature and effects of various plants and plant-constituents; it is, in fact, a brief outline of vegetable toxicology.

In the first chapter the subject is dealt with from a general point of view, the symptoms that usually follow the ingestion of such poisonous or harmful substances being considered, as well as the means that may be adopted as remedies. In the following chapters a short account of the more important toxic plants and plant-constituents is given, accompanied in each case with the most striking symptoms it produces.

The author has certainly succeeded in compressing a large amount of information into a very small compass, and has produced a work that will be useful to physician and pharmacist, especially to such as reside in the country, where the accidental poisoning of children by eating toxic fruits and roots is unfortunately no rare occurrence. The book is remarkably free from error, but *Lobelia inflata*, *Tamus communis*, *Delphinium Staphisagria*, *Gratiola officinalis*, and some others might well have been included in the list of toxic plants, while Dr. Miltacher's very useful work on toxic plants and vegetable drugs might have found a place in the bibliography.

HENRY G. GREENISH.