

The work is a perfect model of descriptive or systematic botany, combining a true sense of proportion, the authors' well-known grasp of their subject enabling them to deal primarily with the material under investigation, and, secondly, with the book phase of the subject known as synonymy.

Seven beautifully executed plates elucidate the text.

*Trees: a Handbook of Forest-Botany for the Woodlands and the Laboratory.* Vol. iv. Fruits. By the late Prof. H. Marshall Ward. Pp. iv+161. (Cambridge: University Press, 1908.) Price 4s. 6d. net.

It was the intention of the author to complete this work in six volumes, but unhappily he was not spared to see the scheme accomplished. However, three excellent volumes, full of useful and interesting information, dealing respectively with buds, leaves, and flowers, had been published, and the author left behind sufficient manuscript for two other volumes. Prof. Groom undertook the task to see these two volumes through the press. A perusal of the present volume shows that the manuscript could not have fallen into better hands. The skill with which he has edited this part leaves nothing to be desired. Like its predecessors, vol. iv. is divided into two sections—a general and a special. The first section contains seven chapters. The first chapter gives an idea of what fruit is, its function and parts. In the second chapter is given a classification of fruits, and the remaining chapters of this section deal with the fruits of woody plants, each under its own natural order. In section ii. we have a tabular classification of trees and shrubs according to their fruits and seeds.

The many excellent illustrations given throughout the volume serve to enhance its value as a book for students and others who may wish to study fruits, and it will also be found of service for the purpose of reference.

The next and final volume is already in the press, and when issued will complete a monumental work on trees written by an enthusiast as only one who is imbued with the love of his subject can write.

"Trees," by Prof. Marshall Ward, will be found of use to the expert and student alike, while the beginner who has once started to read will soon find himself becoming enthusiastic under the inspiring influence of the writer.

A complete index has been compiled for this as well as for the other volumes by Mrs. Marshall Ward.

*The Story of Iron and Steel.* By J. Russell Smith. Pp. xi+193. (London: Appleton and Co., 1908.) Price 2s. 6d. net.

To all who are interested in the gradual development of our great iron industries, and especially the more recent development in America, this little volume may be of some interest. It, however, can hardly be said that the author has succeeded in carrying out the object he had in view, as stated in his preface, of presenting to intelligent persons a clear and concise description of the complex technical phenomena of iron- and steel-making. The author's apparent lack of detail technical knowledge has prevented his emphasising in his descriptions the fundamental principles involved in the various processes to which he refers. Thus, in dealing with the reduction of iron as it was practised during the various stages of development in passing from the catalan forge to the modern blast furnace, there is not the slightest suggestion made that there is any chemical reaction between the iron ores and the fuel

employed, and the lay reader would go away with the impression that the only function of the carbon, in whatever form it was used, was to act as a heating agent.

On p. 99, in dealing with the quality of iron produced, he makes the statement that if the iron is melted at 800° centigrade, it will contain 1 per cent. of silicon, which is, of course, an absurdity, as this temperature is below the melting point of iron. A page or two further on he speaks of the hot blast being injected into the furnace at 800° or 1100° centigrade.

His description of the puddling furnace is of the crudest when he speaks of the carbon in the pig-iron being combustible and gradually burnt out by the flame, while no suggestion is made that the real oxidising agent is the oxide of iron added. In chapter xi., "On the New Steels and their Significance," in which he refers to various alloy-steels, he seems to be under the impression that the self-hardening properties of high-grade steel tools are a function of their melting points, and his statement as to certain influences of manganese on steel certainly has the single advantage of being distinctly novel.

It is to be regretted that the technical descriptions in this little volume are so inaccurate, as in other respects it is a very interesting synopsis of the progress of the iron and steel industry. Perhaps the most interesting portions of the book are those chapters dealing with the various causes which have influenced the great developments in recent years in America, and also induced the rise and growth of the great financial trusts that now so largely control steel manufacture in the States.

*Physiological and Medical Observations among the Indians of South-western United States and Northern Mexico.* By Aleš Hrdlička. Pp. ix+460. (Washington: Government Printing Office, 1908.)

THIS publication is a bulletin of the Bureau of American Ethnology (Smithsonian Institution), and comprises the result of observations among a large number of Indian tribes. It will prove a mine of useful information to those interested in anthropology, but, like the publications of most Government institutions, is hardly written in a manner to make it interesting to the general reader. It contains, for instance, nearly 200 pages of statistical tables. Its title—physiological and medical observations—is justified because the data collected include what is so often missing in books on ethnology, details not only of size, stature, date of puberty, rate of pulse, muscular development, and so forth, but also statistics relating to prevalent diseases and native methods of treatment. Not the least attractive feature of the work is a series of twenty-eight beautiful plates, which illustrate the physiognomy and dwellings of the native races, as well as other points interesting to those who study folk-lore.

The author appears to have spared no pains in carrying out his investigations.

*Ernst Haeckel. Versuch einer Chronik seines Lebens und Wirkens.* By Prof. Walther May. Pp. vii+301. (Leipzig: J. A. Barth, 1909.) Price 5'60 marks; bound, 6'60 marks.

THERE are already two biographies of Haeckel, but Prof. May's book is complementary to these, and written in a different mood. It aims at showing what the great naturalist has accomplished, from his first research in 1855 to the institution of the Phyletic Museum in 1907. The author gives a careful account of the chief results of Haeckel's books,