

plants grow, he will be unable to prune intelligently and to secure the desired results." It is a matter for regret, therefore, that the chapter on plant physiology, with which the book opens, should be inferior to the later chapters, which deal in a clear and useful manner with the practical aspects of pruning. Readers with little or no knowledge of plant physiology would, however, be apt to find the treatment of the subject in this chapter somewhat involved and confusing.

In the succeeding part of the book the photographs of the branches of fruit trees are extremely good, and are accompanied by very clear and simple explanations of the methods of branching. These should prove useful to fruit-growers and to teachers of both horticulture and Nature-study. The pruning of nursery stock, of young and of mature trees, of bush fruits, and of ornamental shrubs is fully dealt with. A chapter on the "rejuvenation of neglected trees" may be mentioned, as it is a subject which should be of interest to some owners of small private orchards who are anxious to obtain the best possible yields from their trees. The author considers that in the case of apple, pear, and sweet cherry trees specimens fifty to seventy-five years old may be profitably "rejuvenated," but that in the case of plums and sour cherries it will be better to destroy the trees and to re-plant.

"Practical tree surgery" is another aspect of the subject which the author has fortunately included in the book, for frequently trees which are specially valuable on account of their position or association could be saved for long periods from decay by a little skilled care and attention. Some hints which might be useful to the authorities responsible for the care of street trees are given, and a model contract which should put "commercial tree-surgery on a basis that will tend to eliminate fakers" is outlined (p. 401).

The book contains numerous references to the experimental work on pruning which has been carried out in this country and in America, and summaries of such experimental trials and of their results are given. These accounts are both fuller and clearer than is usual in abstracts of this kind. As work of this nature has in the majority of cases been published only in the bulletins of the American experiment stations or in horticultural periodicals, it is frequently difficult to trace, and its inclusion in the book is a feature of great value.

In conclusion, it may be added that the book has a good index and more than three hundred excellent illustrations.

OUR BOOKSHELF.

Comment Economiser le Chauffage Domestique et Culinaire. Par R. Legendre et A. Thevenin. Pp. 123. (Paris: Masson et Cie, 1918.) Price 1.25 francs.

THE question of economy in the use of fuel for general domestic heating and cooking is of no

small importance in relation to the general economy of fuel rendered imperative in France by the conditions arising from the war. This small book, issued at a low price under the auspices of the Ministère de l'Armement et des Fabrications de Guerre, is primarily intended to indicate practical methods of attaining economy in the domestic use of fuel, without pretence at scientific treatment of the subject, although there is an excellent section on the principles of combustion and the heat values of fuel.

In the earlier sections the various ordinary fuels are described and also the supplementary fuels, such as peat, lignite, sawdust, tan, etc., briquettes, and simple methods of briquetting small coal. The advantage of using substitutes to the utmost extent to relieve the demand on the better fuels essential for industrial purposes is emphasised.

The second section deals with domestic heating appliances, and, besides describing various forms of fireplaces, stoves, etc., deals with the principles of heating by radiation, conduction, and convection. There is a useful section on smoky chimneys. The final section is concerned with cooking, stress being laid on the advantages of the Norwegian oven. Each section concludes with a summary of possible economies and brief directions as to their realisation. An abbreviated issue of a similar character would well be worth consideration in this country.

The Pasteurisation of Milk from the Practical Viewpoint. By C. H. Kilbourne. Pp. iv+248. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1916.) Price 6s. net.

THE pasteurisation of milk consists in heating the milk to a temperature between 140° and 160° F., the milk being maintained at 140° for not less than twenty minutes or at 160° for not less than one minute. By this treatment disease germs which may have gained access to the milk are destroyed, as well as a large proportion of the bacteria commonly present in milk, whereby its keeping qualities are lengthened. In the United States pasteurisation has been very largely employed, and this little book gives a capital survey of the installation, operation, and control of pasteurising plants. The author speaks from first-hand knowledge, having been chief of the Division of Pasteurising Plants, New York City Department of Health. The various types of pasteurisers are sufficiently described, and this section is illustrated with a number of diagrams of various plants. The cleaning and cooling of milk, the cleaning of containers, and home pasteurisation are also dealt with, the efficiency of various apparatus is discussed, and the changes induced in milk by pasteurisation are described.

The book can be recommended as a thoroughly trustworthy guide on the subject of pasteurisation, useful alike to the student of hygiene and to the practical dairyman.

R. T. H.