

FRENCH SYLVICULTURE.

Sylviculture. By Albert Fron. With an introduction by Dr. P. Regnard. Second edition. Pp. 496. (Paris: J. B. Baillière et Fils, 1909.)

MR. G. WERY, the sub-director of the Institut Agronomique, is the editor of the French Agricultural Encyclopædia," which consists of sixty volumes, each containing 400—500 pages, copiously illustrated, and sold in paper covers at 5 francs each, or bound for 6 francs. The subjects dealt with are distributed under six headings, as follows:—

(1) *Cultivation and Improvement of the Soil*. General agriculture; manures.

(2) *Production of Plants*. Agricultural botany; cereals; fodder plants; garden vegetables, orchards, vines, diseases of cultivated plants. Fron's sylviculture comes under this heading.

(3) *Production of Animals*. Agricultural zoology; entomology and the study of animal parasites; farm stock; breeding and rearing horses; fish; bees; birds; game, &c.

(4) *Agricultural Technology*. Dairy farming; brewing; flour-mills; cider, wine; also agricultural chemistry in two volumes.

(5) *Rural Engineering*. Agricultural machines; motors; buildings; survey; drainage.

(6) *Rural Political Economy, and Law*. This comprises six volumes, including hygiene.

We have therefore a splendid series of cheap scientific books by professors and experts of agriculture and of the allied arts, and if the other subjects are treated as skilfully and thoroughly as Mr. Fron has dealt with sylviculture, the French landowners and farmers are thus endowed with an excellent, cheap, technical literature.

Mr. Fron is an inspector of the State forests, and professor of forestry at the National Forest School at Les Barres, where promising young forest guards are trained to become head-guards and forest officers in the State, communal, and private forests. The first edition of the book has been sold, and this new edition has extended the subject-matter, so as to form a concise, clearly-written book, suitable for the private landowner and his foresters. It is divided into three parts:—

(1) *The Forest and its Constituent Trees and Shrubs*. This gives an account of the life-history of a tree, and a description of its parts; a list of the native woody species of France, with their botanical characteristics, and the uses to which their timber may be put. Then come trees considered in groups, the effects of density of growth, or its absence, on their forms and on the soil. Different kinds of crops of trees, natural or artificial, indigenous or exotic, follow, and the effects of forests on the flow of water and on the soil of mountains are described.

(2) *Practical Sylviculture*. Methods of stocking the ground, artificial or natural. Human agency in its effects on forest soil and on tree-crops. Methods of felling. General ideas about working-plans (quite sufficient for the private owner). Cubage and combinations of woods. Daily work done by an average

labourer in various operations. Protection of forests against man, animals (including insects), physical phenomena (fire, snow, gales, &c.): fungi, weeds, &c. Valuation of forests.

(3) Comprises a study of the types of forest that prevail in France and of their management.

The term *sylviculture* among French professional foresters means a limited part of forestry, dealing with the cultivations of forest trees, but not including valuation or working-plans. The author, being a professional forester, knows this well enough, but has extended the meaning of the term in the way it is understood by the French people, for, unfortunately, the latter have not adopted the old French term, "*foresterie*," which is more comprehensive than *sylviculture*, corresponding to our term *forestry*.

The book is well and logically written and up to date, and its forestry is quite sound, while the printing is well done, and though the plates are somewhat rough, owing to the smooth paper, they serve to illustrate the author's points, and he has performed his task in a masterly manner.

A book resembling Fron's sylviculture, dealing with British woodlands, is still a desideratum. Our works on forestry are either comparatively very expensive and above the heads of the estate forester, or are too sketchy and controversial to be real text-books. But it is doubtful whether any British author could afford to publish a book like Fron's at 5s. a copy, so as to place it within the reach of estate foresters. "Our Forests and Woodlands," by John Nisbet, costing 7s. 6d., is still one of the best short accounts of British woodlands, and is beautifully though sparsely illustrated, but it does not possess the clear scientific arrangement, nor the completeness of Fron's book. "English Estate Forestry," by A. C. Forbes, as well illustrated as is Nisbet's book, costs 12s. 6d., and though also an excellent book, is not sufficiently detailed to become an elementary text-book, nor does it give a satisfactory account of coppice-withstandards, which on the Continent is the only recognised method of producing large, broad-leaved timber other than beech that is within the range of private estate management.

W. R. FISHER.

PRACTICAL CHEMISTRY.

(1) *Exercises in Physical Chemistry*. By Dr. W. A. Roth. Authorised Translation by A. T. Cameron. Pp. xii+196. (London: Constable and Co., Ltd., 1909.) Price 6s. net.

(2) *Laboratory Methods of Inorganic Chemistry*. By Heinrich Biltz and Wilhelm Biltz. Authorised Translation by W. T. Hall and A. A. Blanchard. Pp. xv+258. (New York: John Wiley and Sons; London: Chapman and Hall, Ltd., 1909.) Price 12s. 6d. net.

(1) **A**CCORDING to the experience of the author of this laboratory guide to physical chemistry, the existing German works on the subject contain either too much or too little for the beginner, and he has, therefore, attempted to cater for the