

REVIEWS.

Afforestation in the Lake District. H. H. Symonds. pp. XXI and 97. Pub. Dent & Sons—1936—2/-.

This small volume should be closely studied by every forester. The author is at some pains to stress the fact that he is concerned with the particular local case against afforestation, and that he is not concerned with, nor indeed has he sympathy with, any general crusade against trees. For foresters, however, particularly for those so remote from the locality he discusses as are foresters of the Antipodes, the position is reversed and the book has its value from its general and not from its particular application. The title is misleading ; it had been better called "The Case for Deforestation, with examples from the Lake District." The unique feature of the book is the fact that it marshals and publishes in cold print almost all of the arguments that have for centuries been used verbally and politically to prevent any English-speaking country from having adequate or adequately managed forests. The ingenuous disavowal of other than local application of the arguments used is quite in character : as is the faint praise of forestry tenets for application to all districts beyond the area in dispute.

Unfortunately, the summation of an infinite series of small deforestations must be total deforestation, as every British (in the wide sense) forester knows by bitter experience. Thousands of times have these same arguments, accompanied by the selfsame disavowal and its puny accompanying claim of general approval of trees and arboriculture, been voiced at meetings, deputations, interviews and cabals throughout the Empire. All foresters are weary of impotently rebutting them, because all opponents hitherto have avoided the printed word, and when verbally cornered have invariably shown great ability in retreating behind their approval of the general case for trees elsewhere.

The Canon of the Forest Commutation Service runs in this wise :

- Of interference with agriculture.
- Of abolition or restriction of access.
- Of loss of amenity values (or alteration of the *status quo*).
- Of conflict with public opinion.
- Of the use of wrong species.
- Of excessive initial costs.
- Of the doubtfulness of future sale values.
- Of the distance from railhead or port : and of future road costs.
- Of destruction of game coverts and bird life.
- Of impediments to mining.

The author in this work intones the whole Service, save the last two rubrics : and doubtless, had the Lake District given any pretext for their inclusion, they too would have swelled the volume of his malisons.

Foresters as well as forests share in the proscription. Epithets applied to them range from the familiar one which the author indicates by a long blank line, to the entirely new one "Puginesque." All foresters will be grateful for this addition to their vocabulary; the more so because, had a forester written the book, he would probably have reversed the procedure and used the line for the new word, whilst penning the familiar one in full. Could anything illustrate more clearly the irreconcilability of the author's outlook and the forester's?

C.M.S.

The Physical Basis of Mycotrophy in Pinus—A. B. Hatch, Ph.D. pp. 168 : 16 plates : 21 figures—Published by The Black Rock Forest, Cornwall-on-the-Hudson, New York. (Bulletin No. 6) 1937.

Students of mycotrophy and foresters generally will be indebted to Dr. Hatch for this valuable contribution towards a better understanding of tree mycorrhizae.

Claiming that the experimental approach is the only one that appears capable of yielding conclusive results, the author describes a series of experiments conducted between 1929 and 1935, at first in Sweden (under the influence of Dr. Elias Melin) and later in America.

Of the many experiments described, the confirmation of Stahl's theory (1900) is perhaps of outstanding interest; the author has convincingly proved that mycorrhizae occur only under conditions of nutrient deficiency in the soil, whilst in all but fertile agricultural soils (characterized by nutrient sufficiency) pines, and other trees which form ectotrophic mycorrhizae, are incapable of existence without mycorrhizae.

In a brief chapter entitled "Significance in forestry," the author strongly emphasizes the need for "precise information on the influence of different species of mycorrhizal fungi upon the growth of our most important trees planted in a wide variety of habitats," but does not dwell upon the methods of approach, merely hinting that "this knowledge once gained may prove more useful in forestry than has a similar knowledge of the root-nodule habit of legumes in agriculture."

The inoculation of virgin nursery soils with mycorrhizal fungi is now in most countries (including New Zealand) a routine practice and although frequently successful does not invariably provide the final solution, since, as pointed out by Dr. Hatch, mycorrhizal fungi are more exacting in their site requirements than the trees with which they are associated; in the reviewer's experience this applies particularly to Douglas fir in New Zealand.

The correlation of gradually accumulated evidence bearing on the mycorrhizal requirements of forest trees is possible only with a background of fundamental research such as that under review. This bulletin, splendidly illustrated, and with a bibliography of over 200 citations, constitutes a valuable addition to forest literature.

T.C.B.