BOOK REVIEWS


This compact volume contains, for each of six species of southern pines, yield tables for well-stocked stands, and sets of graphs for predicting future yields in stands of any density. The tables and graphs were prepared from regression equations. These are the only yield tables known to the reviewer which were compiled entirely from formulae. The species are loblolly pine, slash pine, longleaf pine, shortleaf pine, pond pine and sand pine. The authors, Schumacher and Coile, are eminent authorities on forest mensuration and land use respectively.

The yield tables show what well-stocked, even-aged, natural stands of the species can produce for a given age and site quality; but these tables are not suitable for growth prediction unless the particular stand being studied happens to be equally well stocked. According to the authors a “well-stocked” stand is not necessarily “normally” stocked: its stocking is merely about the average of that of the plots used to provide the basic data for the yield tables. These plots were measured in even-aged stands with the “characteristic distribution of diameters” for the age and site, and with stand structure and crown canopy apparently unaffected by past cutting. Presumably, the characteristic distribution of diameters by age and site was already known for each species studied.

The use of the graphs to predict yield in any stand is explained clearly, and illustrated by examples. These include the prediction of yield in sawtimber and pulpwood from the various subdivisions of a hypothetical 50,000 acre forest in Alabama. This example should dispel the doubts of those forest managers who regard yield tables as theoretical tools of little value in “practical” forestry. The principle used, as for the New Zealand Forest Service yield tables, is to predict the basic variables – dominant height (defined as the average height of 8 trees in the dominant and codominant crown classes), number of stems, stand basal area and mean d.b.h. – and to estimate future volume from the predicted values of these variables. The method of prediction is simple enough, but no more so than for the New Zealand Forest Service yield tables for Douglas fir, ponderosa pine, Corsican pine and lodgepole pine, and less so than for the Forest Service yield charts for radiata pine. For accurate work, the procedure recommended also needs a lot of arithmetical interpolation between “families” of curves. The method of predicting the future
number of stems is, I think, clumsy. It is based on the number of stems at age 20 years, so in predicting the future number of stems for a stand over 20, it is first necessary to estimate stand basal area at age 20; then basal area at the future age is estimated; and finally the future number of stems is calculated from the present number by applying the ratio of the percentage number at the future age to the percentage at the present age.

An appendix shows the regression equations from which the graphs and yield tables were derived, and provides brief explanations. Most of these explanations are too brief; and, except for the stocking percentage, the authors do not state why they chose the particular variables as the basis for some of the relationships. Also, except for the trend of the stocking percentage relationship, no results of accuracy tests are included. Tests of the residual error of all the equations could have been done on the basic data for all species, and tests of the trends of the basic variables by age could have been done for loblolly pine on the data from the 55 permanent plots used to test the trend of the stocking percentage on age.

In spite of these small criticisms, this book should be of great general interest to any forest managers growing even-aged timber crops. It should also prove invaluable to forest mensurationists for the new techniques of preparing the yield tables and graphs. The paper, printing and reproductions are all of very high quality.

— G.D.

FUNDAMENTALS OF FORESTRY ECONOMICS. By W. A. Duerr.
N.Z. Price 74s.

This, the latest volume in the American Forestry Series, is one of those encyclopaedic books which seem to be the prerogative of American university teachers. In almost 600 pages Professor Duerr, who had many years experience in the U.S. Forest Service before his appointment to the Chair of Forestry Economics at the College of Forestry at Syracuse, surveys a far wider field than is usual in such texts. The forester who looks through the book for the familiar sections on yield tables, rotations, species and the occasional complicated formula, will find himself dipping into political and social institutions in forestry, the forest economy of the world or social planning for forestry. These are found in Parts IV and V of the book.

The core of the book lies in Parts II and III which deal with the supply of forest products and the market for them. The former, which extends over eleven chapters, is in essence an introduction to production economics. Professor Duerr introduces some basic economic concepts — marginal cost and revenue, production functions, least cost combinations, capital and interest relationships — and shows how they may be applied in management planning for