BOOK REVIEWS

EXPERIMENTAL METHODS IN AGRICULTURAL RESEARCH

By H. H. Love. Rio Piedras, P. R.: Agricultural Experiment Station, University of Puerto Rico. V + 229 pages, 1 illus. 1943. $2.00. English and Spanish Editions. (Available at Triangle Book Shop, Ithaca, N. Y.)

THIS book contains five chapters, three statistical tables, and 64 selected references to the literature. Chapter I, The Measurement of Variability, is a condensed presentation of the usual methods and formulas with a number of worked examples. Chapter II, Analysis of Variance, is devoted largely to discussions of randomized block and Latin square layouts with methods of computation and interpretation of results. Incidentally, in this and succeeding chapters the examples are taken from field plot experiments, using original data and coded values in the computations. Correcting for missing data or plot yields is also discussed. Chapter III, Analysis of Correlation and Covariance, also includes regression and applications of covariance to uniformity trials and control plots. Chapter IV, Practical Application of the Analysis of Variance to Field Experiments, considers the following designs: Combined Latin squares (2 examples,) split-pot experiments, randomized block in a perennial experiment, Latin square manurial experiment with inorganic fertilizer at one level, and farmyard manure at three levels, balanced incomplete block, a lattice design, and confounding. Two sections heading are (1) Transformation of Data, explaining the square-root, angular and logarithmic methods without examples; and (2) The Use of Analysis of Variance in Determining Size and Shape of Plots, using an example in which the computation is abbreviated.

In these four chapters Doctor Love not only discusses the advantages and disadvantages of the designs presented but, except as noted above, gives a very complete and systematically arranged illustration of the computation for each example. Thus, this portion of the volume serves as a computer's handbook for the designs treated. These clear presentations should be especially valuable for the worker who first approaches the subject and, as regards some of the designs, will be of great help to many experimenters who use field plots and have some experience with the analysis of variance. It was impossible to illustrate many designs without greatly increasing the size of the volume. Workers who are interested in other layouts will find carefully selected references to the literature which should guide them to the desired information.

The fifth chapter, General Suggestions for the Conduct of Experiments, may be considered an epitome of an entire volume. In it the author, drawing on the experiences of a life spent on experimental studies, gives one of the finest presentations of the subject known to the reviewer. (Many of the problems are discussed in greater detail in the author's book "Application of Statistical Methods to Agricultural Research," reviewed in this Journal, Vol. 28, pages 867-869.) This chapter could be read with profit by many investigators since it

Published April, 1944