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HERE IS A BOOK that has been needed for many years by research workers in all fields, and particularly in the biological fields. Its title well suggests its contents; it should be clearly distinguished from those books in the wider fields of statistical methods and design of experiments. To draw the contrast in another way, this book places major emphasis on providing a checklist of designs of proven merit rather than a checklist of the principles or features of a good experimental design as covered in statistical textbooks and manuals. The book is unique in this field.

The authors assume that the reader has some knowledge of the principles of analysis of variance and of the computational methods involved as well as some familiarity with the logic of experimentation. However, they devote the greater part of the first two chapters to this third subject. The book is replete with examples of computational methods, both symbolic and numerical, showing the computational procedures, step by step, so that the reader who has had little practice will not feel handicapped.

In the chapter "Notes on the Statistical Analysis of the Results," the authors provide, in condensed form, the mathematical justification of the analysis of variance and covariance and the estimation of missing data. In this chapter, the mathematical model is defined, and the assumptions made in the model are stated for the simple case of the randomized block design. In later chapters, where the designs are more complex, mathematical justification is provided by reference to and extension of the theory developed in this chapter. In each case, the authors first construct the mathematical model involving a linear relationship among the parameters. This is followed by the equations of estimation obtained by the method of least squares. Of particular help to readers who may not have access to statisticians, a set of rules is supplied for making comparisons between treatments and treatment groups and for calculating the standard errors of these comparisons.

Two-thirds of the book is devoted to a listing and discussion of specific experimental designs. Following a chapter on randomized blocks, latin squares, and graeco-latin squares, the authors em-

bark upon a comprehensive discussion of factorial experiments and experiments involving a large number of treatments or varieties. Throughout this discussion, as nearly as the design permits, a uniform pattern of presentation of the material is followed. Each new major design variant is introduced by a description and discussion of its general properties. Following this is a section on the relationship of this to other designs. Next, when pertinent, are sections on arrangement of the material and randomization. Then come sections on statistical analysis with numerical examples and formulas for calculating the errors of treatment comparisons. Generally, formulas are provided for estimating missing data, and for estimating the efficiency of the design.

A highly valuable feature is the section on plans at the close of each chapter. These are supplemented where needed by text sections of notes on the plans and their statistical analysis. At the close of chapter 11, for example, are an index and plans for 46 balanced incomplete block experiments. At the close of each chapter and of the book is a bibliography listing the technical statistical literature in which the mathematical techniques are available, as well as selected papers reporting results of experiments in which the designs have been used successfully. The authors have rendered an invaluable service to research workers and students of statistical methods in bringing together under one cover the results of statistical methods research previously available only in the widely scattered statistical and technical journals in which they were originally published.

It is unusual to find a statistical textbook or reference book which does not include the standard tables of the normal, "F," and "t" distributions for use in making tests of significance and setting confidence limits. This omission, among others, seems to bear out an intention on the part of the authors that this is not a complete textbook or reference but is designed to be used by workers with substantial training and to be supplemented by standard textbooks and books of tables such as those of Fisher and Yates.

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