
Experimental Design and Statistical Analysis

The intimate relationship between the design or logical structure of an experiment and its statistical analysis is a new and rapidly progressing study. It becomes increasingly clear that the biologist should make himself thoroughly familiar with the methods of statistics *before* rather than after his experiments are performed. Professor Snedecor has taken advantage of every opportunity to discuss these "questions of design" in connection with the mathematical procedures discussed in his new manual.

The book has many other features which appeal to the biologist. The exposition is developmental and each statistical technique is illustrated with several sets of data drawn from a wide variety of experiments. Each chapter also includes many unworked exercises, together with answers. This makes it especially valuable as a manual for self-instruction or as a text. Mathematical questions are largely omitted. An arithmetical "proof" is preferred to an algebraic one. Special attention is given to methods of machine calculation.

Emphasis is placed upon the precise formulation of a null hypothesis upon which the statistical argument is rested. This tends to give the reader a clearer grasp of the underlying similarities of the various statistical operations which he performs. The all-important distinction between population parameters and sample statistics is insisted upon throughout. All of the methods are applicable to small scale experiments, being based upon the distributions of chi-square, *t*, and *F*, using the concept of degrees of freedom. Large sample approximations are introduced only as special cases.—*C. W. Cotterman.*

Statistical Methods, by George W. Snedecor. xiii+341 pp. Ames, Iowa, the Collegiate Press, Inc. 1937. \$3.75.