STATISTICAL METHODS FOR AGRICULTURAL WORKERS

This book had its origin in the "Handbook of Statistics for use in Plant Breeding and Agricultural Problems" prepared by F. J. F. Shaw and published in 1936. This handbook has been out of print for several years. The present volume represents a complete revision and a very considerable increase in scope of the subject matter presented. The objective in the preparation of this volume was to provide an elementary text book for the use of agricultural research workers who have limited training in mathematics.

The book is divided into two parts; the first deals with statistical methods and the second involves the design of experiments. Part I comprises six chapters which present the following topics: frequency distributions, normal and binomial distributions, sampling methods and standard errors, tests of significance of means and their differences, the $\chi^2$ test and estimation of linkage, correlation, and regression. Part II covers the following topics: Principles of experimentation, Randomized blocks and latin square, Factorial experiments, Confounding, Split-plot and Strip-plot designs, Analysis of covariance and missing plot technique, Designs for plant breeding trials, Groups of experiments, Practical considerations in field experimentation, and Experiments in cultivators' fields.

The appendix contains a section on interpolation and one on computation. In addition tables are presented containing random numbers, values of the normal deviate, and values of $t$, $F$ and $\chi^2$. The list of references is quite limited with Indian and British authors predominating.

As stated previously, the objective was to prepare an elementary text book for agricultural research workers having limited mathematical training. It is felt that the authors have achieved this objective in a very satisfactory manner. The coverage represents those areas of statistics which would be used most commonly. Numerical examples are presented to insure simplicity of presentation and an understanding of the topic under discussion. The authors are to be complimented on quality and coverage of this elementary text book.—G. F. Sprague

WEATHER ANALYSIS AND FORECASTING

In the preface, the author, a noted meteorologist, states that he has intended to provide a general text on forecasting. In this first volume he has emphasized the dynamics of atmospheric processes—cyclones, anticyclones and fronts. Material is also presented on numerical forecasting. Only a very small portion of this book would be of interest to the casual reader in forecasting. The book is intended for the person with at least a fair understanding of meteorology and a background in forecasting. The reader should also have an understanding of vector notation, since it is used extensively in the book. For these people the book is highly recommended, but not for the casual reader.—R. H. Shaw.

TRACE ELEMENTS IN HUMAN AND ANIMAL NUTRITION

The author, a member of the staff of the University of Western Australia, describes his book as the first attempt to survey the trace elements in relation to their nutritional significance to man and domestic animals. The book is written primarily for specialists in nutrition or students who plan to specialize in nutrition.

Complete discussions of one chapter each, are included for iron, copper, molybdenum, cobalt, nickel, zinc, manganese, iodine, fluorine and selenium. In general, each of these chapters covers the historical background, content in tissues and fluids, absorption and excretion, deficiency and toxicity, requirements for man and animals, and dietary sources for these elements. A brief discussion of aluminum, arsenic, barium, boron, bromine, silicon, strontium, and vanadium are included in one chapter. The final chapter deals with soil-plant-animal interrelationships in which the author points out that many nutritional disorders result primarily from the inability of soils to supply, through plants which grow on them, the essential mineral needs of animals in adequate amounts or proper proportions.

Numerous references are listed for each element, and an author index is included at the end of the book. A minimum number of illustrations are used to show deficiency and toxicity symptoms in animals and man.

Because of the close relation between soils and plants, and animal and human nutrition, this book would be a good reference source for agronomists and soil scientists.

FORAGE CROPS

This is the second edition of Dr. Ahlgren's text and reference which was enthusiastically received in its first edition in 1949. In all respects it matches the quality of the first edition. And in adopting the suggestions of many users and reviewers of the first edition, it will undoubtedly be even more widely used than the first. Lack of coverage of pasture and range problems was felt to be a serious defect in the first edition. This has been remedied in new chapters on pasture and range management. Other new material covers the subjects of hay, silage, and seed production.

The four introductory chapters include history and development, production and use, climate and soil, and characteristics of grasses and legumes. Following these are five major sections with the following headings: The Main Legumes, The Principal Grasses, Requirements for Seeding, Production (with the following 8 chapters: mineral nutrition, grassland mechanization, hay quality, making hay, grass silage, pasture management, range management, and seed production), and the final section, Problems and Prospects with the 5 chapters on insect-plant-animal interrelationships, insect-plant-animal interrelationships, insects, and disease, weed control, and grassland farming.

The text is profusely and for the most part effectively illustrated, and tabular matter is extensive for each crop.

This edition, like the first, can be highly recommended as a college text and as a general forage crops reference.