ture is brought out strikingly in this connection. In many cases new combinations are made for specific names originally proposed in wrong genera, which are then, even on the same page, reduced to synonymy under other species. This seems to be perfectly correct zoological practice, but most botanists scrupulously avoid making unnecessary new combinations. Perhaps the bogey of adding to synonymy has been grossly overemphasized by botanists, since this wholesale creation of new binomials does not seem to inconvenience the zoologists in the least.

In sizing up the character and importance of this series, one may say that it seems to set the pattern for much of the most needed taxonomic work in both zoology and botany during the next century.

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Classical Electricity and Magnetism. Wolfgang K. Panofsky and Melba Phillips. Addison-Wesley, Cambridge, Mass., 1955. xi + 400 pp. Illus. $8.50.

After teaching for a long time from notes and by a multitude of references, it is good to find in a single book material of which one can say, "This is written just about the way I would like to have it done." No two teachers would agree in detail on what should be included in any textbook, but most will feel that this one contains a well-balanced assembly of topics for a graduate course. There is material on wave guides and cavities and material on scattering. Relativistic electrodynamics and the fields from a moving charge are discussed at some length.

The use of meter-kilogram-second units in a book having the stature of this one will speed their acceptance among physicists. Conformal mapping and the Schwarz transformation are treated too lightly to enable the student to work the assigned problems. A scaler magnetic potential that arises from conduction currents is defined, but another that arises from magnetization is also defined. The same symbol is used for both. A little maneuvering could show that the two are identical, but the student may well think that they are distinct. It has always been hard to find problems for an advanced electromagnetics course that are of just the right degree of difficulty; the present book does much to relieve that situation.

The adverse criticisms are trifling ones. This is an excellent book that gives in one volume material that has been scattered throughout many books.

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Experimental Design and Its Statistical Basis. D. J. Finney. Univ. of Chicago Press, Chicago, Ill., 1955. xi + 169 pp. $4.50.

This book is in the series entitled "The Scientist's Library: Biology and Medicine," for which the editor's specifications included emphasis on introductory concepts and problems, assumption of a "common level of scientific competence" among readers, and avoidance of popularization—not easy specifications to meet in the subject of this volume. The author had to write principally for those biologists and medical research workers, still numerous, who are unfamiliar with the past 30 years' developments in the logic, and consequent practice, of experimentation; therefore he had to risk revealing that much of his potential readers' experimentation involves biased or inefficient designs and hazy inferences.

Even if a reader starts with a conception of statistics as some arithmetic for use after an experiment, he can hardly retain that notion after seeing this comprehensive up-to-date presentation of principles with illustrations from a wide variety of experiments on animals and plants, in field and laboratory, and from human therapeutic trials.

The author writes "in the hope of arousing interest," and makes "no claim that the subject is easy, but only that those who will rid themselves of the fear of mathematics can understand much without using advanced mathematical techniques." His advice with reference to some sections—to pass over difficulties without struggling with them greatly—could well apply to any passages that are difficult on the first reading.

One of the book's virtues is that probably no one will learn from it enough arithmetic to swell the multitude of misleading t's and χ^2's in current medical and biological literature—products of an unfortunate sequence in the development of modern statistics; namely, the dissemination of arithmetical techniques before the emergence of experimental methods (such as strict randomization) that are essential to justify the arithmetic after an experiment.

A good book stimulates one to suggest possible improvements, and here are three suggestions.

1) Does not even a brief display of the arithmetic of χ^2 and of t, early in an exposition of experimental design, tend to orient the reader in an undesired direction?

2) Is not the justification of normal (Gaussian) curve methods—an admittedly uncomfortable but fundamental question—too brief? It is to be hoped that, as experimenters become more at home with statistical thinking, they will raise this question insistently. An introductory book could, perhaps, best anticipate such inquiry by pointing out the distinction between techniques of design (such as the Latin square and randomization), which can be justified by well-known properties of our universe, and normal-curve techniques of analysis, which are justified for some phenomena by extensive experimentation and for others by little more than the statistician's analog of "clinical instinct."

3) The last sentence of the text rightly says that any biologist who has read the book will realize the need for a statistical specialist's advice—a very desirable outcome; but one could wish for a few remarks on problems met by a statistical consultant who continues to conduct his own experimental research. Such a person knows how constant must be the vigilance if bias is to be avoided that will render any statistical tests or estimates highly questionable. He knows how scarce statisticians are compared with the myriads of researches that need statistical aid throughout. He is faced with colleagues' demands for statistical analysis of their data, often prompted by journal editors or arithmetically minded referees who are willing to *assume* that an experiment was suitable for such treatment.

On the other hand, he knows that many experiments, not suitable for statistical arithmetic, have led toward the truth because the data have been produced and assessed by a skilled and self-critical experimenter who has arrived at a cautious conclusion—statistical, it is true, but without the spurious definiteness of a P value or a confidence limit.

When a book tends to increase the demand for a scarce commodity, it would not be unfitting for it to give advice to those who wish to obtain the commodity but can obtain little or none of it.

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The World We Live In. Lincoln Barnett and editorial staff of *Life*. Time, Inc., New York, 1955. 304 pp. Illus. $13.50, regular ed.; $15.50 deluxe boxed ed.

When the judges met in 1953 to select the winners of that year's AAAS–George Westinghouse Science Writing awards, they unanimously voted a special citation to *Life's* science department and Lincoln Barnett for the series of articles then appearing in *Life, The World We Live In.*

The series has since been completed and is now available in book form. In 1953 the judges considered the magazine