

Elementary Mathematical Statistics

By Prof. William Dowell Baten. Pp. x+338. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1938.) 15s. net.

BOOKS concerned with statistics fall roughly into two classes, those which aim at providing a variety of methods for the analysis of data without making any serious attempt to prove the formulæ given, and those which concentrate on the proofs of the propositions under discussion.

Dr. Baten's work falls into the latter class. It will undoubtedly be criticized as too narrow by those who desire a compilation of methods, and such criticism would not be entirely unjust, as exact tests of significance, experimental design and analysis, orthogonality and degrees of freedom are either mentioned very briefly or entirely omitted. The discussion of correlation is very full, but leaves one wondering whether a discussion of regressions would not have been of more value. To the research worker and the student, therefore, the book is not to be recommended for uncritical use. To the teacher, however, it should prove of value, as the approach to many of the questions raised is of attractive simplicity. Where it is necessary to provide algebraic demonstrations to students with limited mathematical knowledge this book should be a useful guide.

K. M.

A Guide to Chemical Laboratory Practice:

for Beginners. By Prof. H. Bassett. Pp. viii+94. (London: Macmillan and Co., Ltd., 1938.) 2s. 6d.

IN this book an attempt is made to supply the information which is usually provided by the demonstrators in the elementary laboratory. In this way time and trouble may be saved. Some of the information may seem rather trivial, as when the student is warned not to stumble and fall when carrying a desiccator; but most of the hints given are useful. Every teacher knows that it is of the utmost importance to instil into beginners those habits of neatness and orderly work without which no real progress can be made in practical chemistry, and this modest volume will certainly assist in this way if students can be persuaded to read it and carry out the good advice which will be found in abundance on its pages.

Principles of Electricity and Electromagnetism

By Prof. Gaylord P. Harnwell. (International Series in Physics.) Pp. xiii+619. (New York and London: McGraw-Hill Book Co., Inc., 1938.) 30s.

PROF. HARNWELL'S book is an interesting, and on the whole successful, combination of the classic-theoretical and modern-practical treatments of electromagnetism. We have, for example, in Chapter i the conventional elementary treatment of electrical images, while Chapter v treats at some length of current-voltage relations in non-ohmic circuit elements, including the interesting ceramic material, thyrite. A good deal of space is given to conduction in gases and to thermionic vacuum tubes, and in

general any topic taken up is given a space very nicely proportioned to its present-day importance rather than to its historical interest. British students will find the book more suitable for reference than as a regular companion in a degree course—and its strongest appeal will be to the physicist with a marked bias towards the practical side of his subject, or even towards the more academic side of electro-technics.

Logical Aspects of Educational Measurement

By B. Othanel Smith. Pp. x+182. (New York: Columbia University Press; London: Oxford University Press, 1938.) 12s. 6d. net.

THE author of this book has attempted to clarify his ideas about the meaning of measurement in education, in which he has found most help from the well-known writings of Dr. Norman Campbell. Approximately the first five chapters are devoted to the logical foundations of measurement, the last four to questions more particularly concerned with educational measurement.

The logical treatment is nothing like so rigorous as that found, for example, in the paper by Mr. J. Guild on "Are sensation intensities measurable?", in the current Report of the British Association for the Advancement of Science, but it follows somewhat similar lines. Mr. Othanel Smith concludes that quantitative units have not been established in educational measurement. The requirement of *order* has often been fulfilled, but not that of *addition*. Just now in educational measurement, he thinks, it is more important to concentrate on the operational interpretation of *order* and *equality* than to seek for an additive structure.

Nauka Polska:

Jej Potrzeby, Organizacja i Rozwój (Science and Letters in Poland: their Needs, Organization and Progress). Tom 24. Pp. x+587. (Warszawa: Kasy Imienia Mianowskiego, 1939).

UNDER the able editorship of Prof. S. Michalski *Nauka Polska* each year acquaints Polish men of science with the tendencies and general advances over a wide field. In the latest volume there are four articles (three short and one fairly long) entitled respectively, "Science and the Irrational Element", "Humanities and the Vital Needs of the Nation", "Visual Thinking" and "Scientific Life in Modern Cracow". In the second of these, the author, Prof. K. Dobrowolski, discusses the part that each branch of the natural sciences can have in enhancing national and cultural life.

Most of the volume is taken up with numerous shorter items, reviews and a bibliography of the "Science of Science". Some of these shorter notes, such as that describing the foreign literature available for students in Polish libraries, are of direct interest to British readers, and it is perhaps significant that some thirteen English books are among the thirty reviewed in this issue of what may be regarded as a most influential scientific publication in Poland.