translation is under review. In a remarkably clear, lucid, and simple, but largely qualitative, fashion, the author presents the cogent factors of gaseous discharge from the basic processes involved through the various types of discharges, including as well a few technical applications. This book is written for the average engineer or person with a college degree based on the physical sciences, and presents in a comfortably readable fashion the elements of electrical discharge in gases, especially as developed during those years when Penning was the experimental leader in the field. This booklet is on a par in character with the monograph series published by Methuen, but is somewhat less technical and of broader scope. Obviously, when it is recognized that the more rigorous treatment of the subject in volumes 21 and 22 of the Springer *Encyclopedia of Physics* of 1956 covers the same scope of information, it is clear that Penning's coverage cannot be more than superficial. Because of its clarity and simplicity and the judicious choice of the most essential elements, this presentation represents a truly remarkable achievement in condensation. It will prove to be of interest and value to those wishing a quick, stimulating preview of this useful and interesting field of knowledge.

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Mathematics and Statistics for Use in Pharmacy, Biology and Chemistry. L. Saunders and R. Fleming. Published under the direction of the Council of the Pharmaceutical Society of Great Britain. Pharmaceutical Press, London, England, 1957. x + 257 pp. Illus. 27s. 6d.

In the words of the authors, this book provides students in pharmacy and other biological subjects with "a short course in mathematics and statistics which assumes very little knowledge of either topic." In reality, it touches upon so many complex subjects in such a limited space that it is not likely to give the unaided reader a working knowledge of either the mathematics or the statistics it covers.

Following two chapters on arithmetic and algebra, chapter 3 introduces analytical geometry, curve forms, and the graphical solution of equations. Chapter 4 covers arithmetic and geometric progressions, series, permutations and combinations, the binomial theorem, and natural logarithms. The next three chapters present the rudiments of differential calculus, the higher derivatives, partial differentiation, and rules of integration. These lead directly to a chapter on trigonometry including trigonometric identities and trigonometric integrals, differential equations of the type applicable to chemical reactions, radioactive decay, and diffusion. Chapter 10 treats equations and series for describing experimental measurements.

The remaining five chapters are statistical, in each case with a discussion of elementary theory followed by one or more applications in biology, chemistry, or pharmacy. Beginning with the probability concept, the authors discuss the binomial, Poisson, and normal distributions. Following this, in a chapter on the statistical analysis of repeated measurements, the mean, standard deviation, and limits of error are considered. In one chapter on tests of significance and comparison of data by statistical methods, the authors cover in rapid succession the normal deviate test, the t test, the variance-ratio or F test, the χ^2 test, least-squares regression, correlation coefficients, covariance, and the error of regression coefficients. Some applications of statistics to biological assay and bacteriology (in chapter 14) and to quality control in pharmacy (in chapter 15) complete the text. Derivations of the more important relations, constants, and reference tables are presented in a series of 13 appendices .

On the whole, the examples are well selected and lucidly explained. *Mathematics and Statistics* contains much fundamental material in a concise and well organized, but oversimplified, form—especially in the statistical chapters. It employs a consistent, mnemonic symbology, and appeals to the intuition of the reader. By bringing together in a compact volume many of the mathematical concepts which underlie basic statistical theory, the authors give the reader a better insight into the interrelations of these concepts than he would gain from the usual introductory text in statistics.

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The Brain and Human Behavior. Proceedings of the Association, December 7–8, 1956. vol. XXVI of *Research Publications, Association for Research in Nervous and Mental Disease.* Williams and Wilkins, Baltimore, 1958. xi + 564 pp. $15.

The student of neurological science will find in this volume a worth-while group of essays on various aspects of the human nervous system. The 21 individual contributions are by outstanding investigators drawn from such fields as physiology, psychology, pharmacology, electrophysiology, clinical neurology, and neurosurgery. The resulting mélange of vocabulary, constructs, techniques, and methodologies somehow permits the emergence of new and important findings bearing on brain-behavior relations.

The corpus callosum is no longer "silent" but appears to provide facilitation of sensory input to the two hemispheres. The frontal lobes, all important in mediating the higher levels of mentation, are apparently secondary in importance to the temporal and parietal lobes in mediating various personality functions, including the "body schema."

Of considerable medical significance is the fact that certain patients with uncontrolled psychomotor epileptic seizures may be benefited by unilateral anterior temporal lobectomy without serious loss in mentation.

Objective behavioral techniques have now been developed which define operationally a frontal lobe principle in the human brain. This principle is apparently redundant to some extent throughout the cerebral cortex and is disturbed by a 2 to 3 percent lesion (average brain weight is taken to be 1400 grams) or more, regardless of cortical locus. The possibilities of "chemical facilitation" in such cases are as yet unexplored.

The reader will search in vain in this volume for a compelling theory or model of brain functioning. Theory in this field cannot yet successfully integrate empirical fact. Nevertheless, he will welcome the continued sponsorship of such studies through its annual programs by the Association for Research in Nervous and Mental Disease, one of the very few remaining medical societies devoted to bridging the void between modern neurology and psychiatry.

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Physics of Nuclear Fission. Supplement No. 1 of the Soviet journal *Atomnaya Energiya.* Translated by J. E. S. Bradley. Pergamon, New York and London, 1958. vi + 182 pp. Illus. + plates. $9.

This book, entitled *Physics of Nuclear Fission,* is actually a translation of the first supplement to the Russian journal *Atomic Energy,* in which were published the papers read at a conference on the physics of nuclear fission, held in January 1956 at the Atomic Energy Institute of the Academy of Sciences of the U.S.S.R.

The conference appears to have been an excellent one, and a surprisingly wide range of material is presented in the