cusses primarily the classical equations of mathematical physics. But he stresses the methods that are applicable to more general cases and concludes each chapter with a brief summary of recent work. It should be mentioned that these summaries reflect almost exclusively the important work done in Russia.

The book can be highly recommended as a textbook for first-year graduate courses and for self-study. A reader who has worked his way through this book will be prepared to read more voluminous monographs, such as the classical *Courant-Hilbert,* and current literature.

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A Symposium on Amino Acid Metabolism. Sponsored by McCollum-Pratt Inst. of Johns Hopkins Univ. William D. McElroy and H. Bentley Glass, Eds. Johns Hopkins Press, Baltimore, 1955. xvi + 1048 pp. Illus. $12.50.

The nature of this book is well epitomized in the first paragraph, page 950, of a summary chapter by Bentley Glass: "It must be admitted that the treatment of amino acids in many extensively used textbooks of biochemistry is woefully inadequate and misleading. There are generally said to be 19 (or 21), or maybe about 25, naturally occurring amino acids, although the number now known actually exceeds twice that many. Very little is said about the synthesis of amino acids, only generalities are stated in regard to protein synthesis, and no over-all view of the reactions of amino acids leading to the production of other amino acids, of peptides, of excretory products, or of other compounds is supplied. Of the 'general reactions' of amino acids, deamination receives the fullest recognition, probably because of its importance in the formation of ammonia and the ultimate production of urea. Decarboxylation is scarcely mentioned; transamination and transmethylation are beginning to be regarded as possibly of some future importance; while peptide and protein syntheses are customarily honored with a few generalities. A few works have begun to portray the field more adequately and to orient students in this obviously key area. Yet the time is surely ripe for a major revision and reorganization of our thinking about amino acid metabolism. The current McCollum-Pratt Symposium has undertaken to lay the basis for that."

The book consists of 58 original papers with discussion by participants other than the authors. The authors are in general the leading exponents of research in this field and the book may, on the whole, be accepted as authoritative. The exposition of the subject is extensive but not complete. The general student of biochemistry will be rewarded if he is prepared to devote several days to careful study of the text. The book's principal use will be as a convenient reference for the specialist in amino acid research, a purpose that will be greatly aided by its excellent author and subject indexes.

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Abstract Bibliography of Cotton Breeding and Genetics, 1900–1950. R. L. Knight. Tech. Communication 17, Commonwealth Bureau of Plant Breeding and Genetics. Commonwealth Agricultural Bureaux, Farnham Royal, Bucks, England, 1955. 256 pp. 21s.

This volume, containing the abstracts of 1191 articles on cotton breeding and genetics, will be extremely useful to workers in the field. R. L. Knight has done an excellent job of abstracting the various articles, and he has made an effort to include every major scientific paper on the subject published between 1900 and 1950. Our files of United States literature in the field of cotton breeding and genetics have been checked against Knight's list and the only striking omission found was J. O. Ware's résumé on cotton breeding in the U.S. Department of Agriculture Yearbook for 1936. It is felt that the book would have been improved if general references and review articles had been listed separately from original contributions.

Three useful appendixes are given in this book: (i) The genome of *Gossypium,* (ii) a gene list for *Gossypium,* and (iii) gene linkage. Workers in the field will be grateful to Knight for bringing up to date the gene list for *Gossypium,* inasmuch as this has not been done since Hutchinson and Silow published a similar list in 1939.

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Quantitative Methods in Histology and Microscopic Histochemistry. Olavi Eranko. Karger, Basel; Little, Brown, Boston, 1955. 160 pp. Illus. F. 19.75.

The title of this book is perhaps misleading, because the text is concerned with the mathematical appraisal of variation and selection of material to obtain statistically valid numerical expressions of prevalence of histochemical, tinctorial, or strictly morphologic components of tissues rather than with methods of quantitative microchemical analysis.

The book covers well, in lucid language, an area in histochemical investigation that has provoked much discussion in past meetings but has hitherto evoked no comprehensive treatment.

The table of contents is comprehensive and outlines well the real content of the book. The relationship of mathematical quantitation to selection of material, to ultracentrifugation, physical observation methods, staining and histochemical reactions, relative volume area and number estimation, absorption photometry, and statistical analysis of results is discussed.

The book should serve to introduce students and investigators to the application of numerical evaluation to histochemical investigation.

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Variable Stars and Galactic Structure. Cecelia Payne-Gaposchkin. Athlone Press, Univ. of London, 1954. xii + 116 pp. $3.50 (U.S. Distrib.: de Graff, New York 10).

During the past 30 years Cecilia Payne-Gaposchkin has written three major monographs, in addition to several smaller books and a large number of research articles. Her doctor's thesis, *Stellar Atmospheres* (1925), marked an epoch in astrophysics and interpreted the observational results of stellar spectroscopy in terms of E. A. Milne's theory of stellar atmospheres. In 1930 she published *The Stars of High Luminosity,* which was an extension of her earlier work that profoundly influenced the work of all contemporary astrophysicists. *The Variable Stars* (1938) written in collaboration with her husband, S. Gaposchkin, discussed the physical properties of all groups of variable stars, including those of the eclipsing and nebular types.

The present book is concerned with the intrinsic variables as tools in the study of the structure of our galaxy—the Milky Way. It is the best of her books, and it crams into the space of 116 pages an enormous amount of new research. Mrs. Gaposchkin remarks in the preface: "As a book of this kind is printed, the work that will make it obsolete is being done. Such is the price that must be paid for writing on a subject that is actively advancing, and it calls for no apology." There is no doubt that the appearance of this book will itself stimulate new research and thus accelerate its process of