and stimulating to students working either in the field of mycology or plant pathology. One is impressed by the authors' thorough familiarity with their subject matter.

The text is followed by an extended bibliography of more than 600 references and an index to generic and specific names of smuts and to the British hosts. Although the systematic material presented is limited to the smuts found in the British Isles, it will be a valuable and useful book to students elsewhere.

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Theory of Mental Tests. Harold Gulliksen. New York: Wiley; London: Chapman & Hall, 1950. 486 pp. $6.00.

In this book Professor Gulliksen has brought together and "distill'd to the sweet substance of pellucid thought" an enormous amount of journal literature covering more than half a century, not all of which was notable for its original lucidity. In this book he has, moreover, contributed notably to the thinking that, in spite of many unsolved problems of analysis, has provided a rational, scientific foundation for much of psychology in general, and test theory in particular. It is a major contribution in a rapidly developing area of psychology that no advanced student of the science of psychology can afford to ignore, especially if he is interested in applications to human engineering. While developing test theory, the author continually keeps in mind the practical human purposes to be served by tests.

The book consists of 21 chapters, with headings ranging from "Basic Equations Derived from a Definition of Random Error" to "Problems of Weighting and Differential Prediction" and "Item Analysis." There are also four useful appendices. Each chapter develops its theme with clearness and economy.

This volume will doubtless become a standard textbook for advanced courses in test theory and technology. Commendable aspects of the volume include the many labor-saving computational diagrams and short-cuts; concise section and chapter summaries; excellent sets of problems and exercises at the end of each chapter; an appendix giving the equations from algebra, analytical geometry, and statistics used in developing the theory of tests; a table of ordinates and areas of the normal curve; 10 pages of searching "Sample Examination Questions for Use as a Review Examination at the Beginning of the Course in Test Theory;" 14 equally searching pages of "Sample Examination Items in Test Theory;" 24 pages of bibliography (this reviewer counted 535 titles); an author index; and an adequate topic index.

The average liberal arts undergraduate in this country, with no more mathematics than he typically gets, will find it necessary to learn more mathematics or to leave as incomprehensible certain sections and chapters that require, in addition to algebra, statistics, and analytical geometry, some knowledge of curve fitting, matrix theory, and the use of determinants. If he has mastered the requisite mathematics, however, the student and the research worker will find this book a convenient and powerful new tool.

The fashion in book reviewing appears to require some critical comments. Concerning a work of such excellence such comments could hardly be more than carping criticisms. Nevertheless, not even Gulliksen's enormous and thorough scholarship can avoid occasional minor lapses. When, in discussing methods of scoring tests, he points out that personality factors of testees may influence their skipping or failing to attempt items, and says (p. 246) "No one seems to have investigated such possibilities," he overstates the case. There have been a very few such studies, and such personality factors have been found to operate.

All professional workers concerned with tests and testing owe Professor Gulliksen a debt of gratitude for having written, so far as this reviewer is aware, the best book of its kind available and a landmark in a rapidly growing complex area of science—clearly written, eminently teachable as a text, and invaluable as a reference work on the rationale of mental testing. Moreover, he suggests many problems that further investigation, both analytically and experimentally.

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Scientific Book Register

Somatic Development of Adolescent Boys: A Study of the Growth of Boys during the Second Decade of Life. Herbert Rowell Stolz and Lois Meek Stolz. New York: Macmillan, 1951. 557 pp. $9.00.

Pertubation Methods in the Quantum Mechanics of n-Electron Systems. E. M. Corson. New York: Hafner, 1950. 308 pp. $11.00.

Hyperbrachycephaly as Influenced by Cultural Conditioning. J. Franklin Ewing. Cambridge, Mass.: Peabody Museum of American Archaeology and Ethnology, Harvard University, 1950. 99 pp. $3.75.

Researches in Binocular Vision. Kenneth N. Ogle. Philadelphia-London: Saunders, 1950. 345 pp. $7.50.

The Computation of Elements of Eclipsing Binary Systems. Zdeněk Kopal. Cambridge, Mass.: Harvard College Observatory, 1950. 181 pp.

Technique of Organic Chemistry: Distillation, Vol. IV. Arnold Weissberger, Ed. New York-London: Interscience, 1951. 668 pp. $14.00.

Radioactive Tracers in Biology: An Introduction to Tracer Methodology. 2nd ed. Martin D. Kamen. New York: Academic Press, 1951. 429 pp. $7.50.

The Water and the Power: Development of the Five Great Rivers of the West. Albert N. Williams. New York: Duell, Sloan & Pearce, 1951. 378 pp. $4.50.

Le Sostanze Cancerigene: Costituzione e Ipotesi sul Meccanismo d'Azione. Maria Prato and Giorgio Nebbia. Città di Castello, Italy: Soc. Tip. Editrice "Leonardo da Vinci," 1950. 151 pp.