

# Book Reviews

*The Population of India and Pakistan.* Kingsley Davis. Princeton, N. J.: Princeton Univ. Press, 1951. 236 pp. \$7.50.

This book is the fifth of a series of population studies undertaken by the Office of Population Research of Princeton University with which Dr. Davis was formerly associated. It gives us, first of all, an excellent picture of the population of India and Pakistan. It is rich in maps, tables, and figures from which one may quickly grasp the quantitative data. One soon recognizes how thoroughly the censuses have been studied and the competent and imaginative handling of the figures. The lazy method of some writers who combine conflicting data in the same table, with a mere footnote warning to the reader, does not appear here; the author himself has carefully produced those adjustments of figures necessitated by changes in census procedures, by the separation of Burma from India, and by the partition into the Indian Union and Pakistan. By the device of an oversize volume, figures, maps, and tables have adequate space for inclusiveness and clarity.

But the population picture is not primarily quantitative. The text adds meaning to the statistics by way of historical background and cultural interpretations and implications. Indeed, the second half of the book is concerned directly with "social structure and social change," including an application of demography to urbanization, education, caste, and religion, a discussion of the recent partition, and finally an appraisal of economic achievement and a suggested population policy. In fact, the volume centers not merely on the "population" but on the "population problem" of India and Pakistan.

Davis sees this problem somewhat as follows. The outstanding fact is poverty, and the primary goal is a greater per capita real income. It is too simple to say that this goal can be achieved through industrialization. As a result of developments usually accompanying modern industry, but lagging in India, "population growth has become a Frankenstein" and agriculture an insecure base for further industrialization. In order to avoid "disastrous growth of population or a calamitous rise in the death rate" a decline in fertility is necessary. Such a decline is not predicted as a normal development in the immediate future. It must be achieved through conscious policy. Not only will a crowded population, on the eve of industrialization impede industrial development, but the final level of income may be affected, as it seems possible "that the real income in industrial countries is strongly influenced by the point at which demographic growth is stabilized with reference to resources."

A lower birth rate—the only practical means of slowing down the rate of population growth—can be achieved through birth control or rapid industrialization. The author recommends both, but believes that

the former is actually easier to achieve than the latter, because "a program of forced industrialization would violate far more taboos and arouse more resistance than would the dissemination of birth control education and propaganda." The likelihood is that the current policy and program of industrialization in Pakistan and the Indian Union will not sufficiently emphasize those very elements which would depress fertility, namely, education, urbanization, mobility, multifamily dwellings, and conspicuous consumption.

Thus Dr. Davis does not hesitate to give us the benefit of his advice, and thereby makes his book more interesting and useful. This is true not only of the main subject but also of incidental matters. For example, on page 13, he draws this conclusion: "The partition of India need not have happened, because the geographical and cultural basis for a single united India was present." And on page 200 he says that Pakistan and India might "adopt the mistaken view that military efficiency would be increased by an expansion of numbers."

Mention must be made, finally, of the good bibliography, which is topically arranged.

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*The British Smut Fungi (Ustilaginales).* G. C. Ainsworth and Kathleen Sampson. Kew, Surrey, England: Commonwealth Mycological Institute, 1950. 137 pp. \$3.00.

This is the first general biological and systematic account of British smuts since Plowright's 1889 *Monograph of the British Uredineae and Ustilagineae*. The book includes a description of 74 species of British smuts, involving 14 genera. The descriptions are based on the smut collections in the British national herbariums and on critical review of published materials. The authors give a key to genera but not to the species. With the exception of *Ustilago* the species are arranged under the generic name in alphabetic order. In *Ustilago* the species are grouped on the basis of size and markings of chlamydospores.

Along with morphological description of the species, there are short concise accounts on germination of spores, infection of host, and racial specialization for many of the important species. In addition there are many sketches of the chlamydospores and their mode of germination.

The authors do not propose any new species, but new combinations are used. Thus *Ustilago nuda* includes *U. tritici*, *U. kollerii* is combined with *U. hordei*, and *U. nigra* is designated as *U. avenae* f. *nigra*.

Thirty-seven pages of the text are devoted to brief accounts of biology, cytology, genetics, techniques, and classification. These are presented in an interesting and concise manner, and are indeed informative

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.

**Perturbation 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.