

Although the field work was done almost two decades ago, Oliver casts much of his material against a theoretical field of much more recent vintage. His terminology conforms to that of Homans, Kluckhohn, and Hoebel, among others. Unfortunately, Oliver does not seem to be aware of such work as that of Karl Polanyi, for the Polanyi approach to such concepts as money and value might have added greater clarity to the book. Similarly, the employment of the concept of "redistribution" with its implications and ramifications might have made Siuai economy seem more rational (although not in terms of classical economics!) and less atomistic.

As a final word I would like to say that this is, above all, an exceedingly fine ethnography and one that is certain to be widely used in testing current theories about the emergence of ranking and stratification and the development of political power. Although it does not give great detail on the precise field methods used, it is an excellent job of analytic reporting and well worth recommending to those scientists who, not anthropologists themselves, would like to see a competent ethnographer at work.

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Information Theory in Psychology.

Problems and methods. Henry Quastler, Ed. Free Press, Glencoe, 1955. 436 pp. \$6.

Information theory has stimulated at least its share of large-scale conferences and symposia. The papers presented at five of these conferences have been collected into book or booklike form, and now we have a sixth.

The conference from which this volume was derived was held under the auspices of the Control Systems Laboratory at the University of Illinois in the summer of 1954. It had a somewhat more restricted scope than, for instance, the biannual London conferences on communication theory, in that it was exclusively concerned with the application of information measures and theory to behavioral studies. However, of the 53 conferees and/or contributors to this volume, 21 are not professional psychologists, or in any event are not listed in the latest directory of the American Psychological Association. Quastler, who organized the meeting and edited this volume of the proceedings, is a radiobiologist.

Partly as a result of the interdisciplinary structure of the meeting, non-psychologists will find things of interest here. In particular, those who are con-

cerned with the application of information theory to finite samples and situations that do not fit the conventional communication system model will find some of their problems discussed. The admonitions of Cronbach, "On the non-rational application of information measures in psychology," are a particularly good antidote to the overenthusiastic acceptance of the verbalisms of information theory. It probably should be pointed out that the too ready use of information measures is by no means confined to psychologists; other conferences on information theory could well have started out with this same skeptical note.

Also in this volume will be found the first readily accessible publication of Miller's work on the bias of information estimates. In fact, this is the first collection of papers on information theory in which there appears a recurring awareness of the *statistical* problems involved in the application of information measures.

Unfortunately, such genuine contributions to the field are interleaved with a number of other papers that either duplicate material which the same author has presented more completely elsewhere or that read like informal progress reports to a small group of coworkers. Perhaps the best part of the book is the editorial comment by Quastler, who introduces and then comments on each paper. These comments are uniformly wise and thoughtful, and in many instances they contain substantial amounts of additional data. By this device, Quastler gives a coherence to this collection of papers that is more apparent than real. The reader who would like to get a picture of the successes and failures of information theory in psychology would do well to read Quastler's comments first and then make a judicious selection of the papers that constitute the bulk of the volume.

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Handbook of Vital Statistics Methods.

Series F, No. 7. *Studies in Methods*. Statistical Office of the United Nations, New York, 1955. 258 pp. \$2.50.

The purpose of this handbook is to "explore current practices, to make conveniently available recommended statistical standards, and to present uniform concepts, definitions and procedures upon which development of national vital statistics and the improvement of their international comparability may be based."

Following a historical summary, the whole scope of vital statistics operations

is described, including their uses; legal and administrative provisions for their recording; definitions of the events covered (births, deaths, stillbirths, marriages, and divorces); duties and qualifications of registrars and informants; types of registration; details of the reporting process and of report forms; uses, definitions, and classification of statistical items as well as problems relating thereto; compilation and tabulation of data from the reports; computation of rates and indexes; and evaluation of the entire system.

The presentation of the basic principles involved by citation of actual practices in 65 different countries avoids the impression of dogmatic pronouncements and hence makes the recommendations especially acceptable. Moreover, the equitable discussions of the advantages and disadvantages of various methods—for example, "civil" versus "health" administration—serve to suggest adoption of specific arrangements that will avoid or circumvent the deficiencies inherent in a particular system. Similarly, the exposition of the problems created by variations in definitions or in application of definitions—for example, "live birth" versus "stillbirth"—emphasizes the care required in analysis. Authoritative suggestions regarding such basic factors as size, shape, and layout of report forms, color of forms and inks, and wording of instructions bring the report to practical elementals.

Detailed and summary tables have been profitably used to identify general patterns of vital statistics practices. Such factors as the limitations of specific collection methods—for example, aggregation of data from summary reports versus compilation from individual reports—have been readily illustrated by this means. Specific vital statistics data from selected areas also serve effectively to demonstrate the points at issue.

Coding, classification, and tabulating problems are explained in detail, and the need for error control is emphasized. Tabulating methods are briefly but adequately mentioned, while such factors as coverage (partial versus complete), time reference (year of registration versus year of event), and geographic reference (occurrence versus residence) are thoroughly explored. Specific "minimum" tabulations are outlined; in addition, "optional" ones are presented for jurisdictions that can undertake them. Statements of the uses or purposes of each tabulation fully justify the recommendations.

The description of rates, ratios, and other vital indexes is sufficient for a general understanding of the problem of computing them and of the limitations inherent in them.

Evaluation methods include sugges-

tions for testing completeness of registration and of statistical reporting as well as for assessment of the quality of the data. The suggestions are not exhaustive, but they are indicative of the directions evaluation may take.

The *Handbook* is, in effect, a commentary on the 1953 *Principles for a Vital Statistics System* that demonstrates from actual practices the rationale behind the latter document. Its recognition that more than one method may serve the principles laid down enhances its effectiveness.

The annexes include a chronology of important events in registration and vital statistics history, a reproduction of the earlier *Principles of a Vital Statistics System*, definitions of "stillbirth" in 84 countries, and an extremely valuable list of references classified by subject matter. The index is sufficiently detailed to afford ready reference to specific subjects.

Altogether, the *Handbook* provides a liberal education in its field. It should be read by every consumer of vital statistics. For registrars and producers of vital statistics, it is a must, and for areas that are building a vital statistics system, it represents an indispensable *vade mecum*.

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New Books

Swine Production. W. E. Carroll and J. L. Krider. McGraw-Hill, New York, ed. 2, 1956. 496 pp. \$6.50.

Microscopic Petrography. Wm. Heinrich. McGraw-Hill, New York, 1956. 296 pp. \$6.50.

Physics of Fully Ionized Gases. Lyman Spitzer, Jr. Interscience, New York, 1956. 105 pp. Paper, \$1.75; cloth, \$3.50.

Economic Geography of Industrial Materials. Albert S. Carlson, Ed. Reinhold, New York; Chapman & Hall, London, 1956. 494 pp. \$12.50.

Kernmomente. Hans Kopfermann. Akademische Verlagsgesellschaft, Frankfurt, 1956. 462 pp.

General Biology. Harrington Wells and Patrick H. Wells. McGraw-Hill, New York, 1956. 520 pp. \$6.50.

Alcoholism, Its Psychology and Cure. Frederick B. Rea. Philosophical Library, New York, 1956. 143 pp. \$3.50.

Life in Fresh Water. E. S. Brown. Geoffrey Cumberlege. Oxford Univ. Press, London, 1955. 64 pp. \$2.75.

Voices on the Wind. Polynesian myths and chants. Katharine Luomala. Bishop Museum Press, Honolulu, 1955. 191 pp.

Portraits from Memory. Recollections of a zoologist. Richard B. Goldschmidt. Univ. of Washington Press, Seattle, 1956. 181 pp. \$3.50.

The Physical World. Paul McCorkle. McGraw-Hill, New York, ed. 2, 1956. 465 pp. \$5.25.

Biochemical Mechanisms in Inflammation. Valy Menkin. Thomas, Springfield, Ill., ed. 2, 1956. 437 pp. \$9.50.

A Venture Forward. A history of the American College of Hospital Administrators. Ira A. Kipnis, Comp. American College of Hospital Administrators, Chicago, Ill., 1955. 145 pp.

A Textbook of General Physiology. Philip H. Mitchell. McGraw-Hill, New York, ed. 5, 1956. 885 pp. \$10.50.

Culture, Psychiatry and Human Values. The methods of a social psychiatry. Marvin K. Opler. Thomas, Springfield, Ill., 1956. 242 pp. \$6.

Every Other Bed. Mike Gorman. World, Cleveland, 1956. 318 pp. \$4.

Thinking Things Through. An introduction to logic. Maylon H. Hepp. Scribner's, New York, 1956. 455 pp. \$5.50.

The Annual Survey of Psychoanalysis. A comprehensive survey of current psychoanalytic theory and practice. vol. III, 1952. John Frosch, Ed., and Nathaniel Ross, Sidney Tarachow, and Jacob A. Arlow. International Universities Press, New York, 1956. 682 pp. \$10.

Art in Coinage. The aesthetics of money from Greece to the present day. C. H. V. Sutherland. Philosophical Library, New York, 1956. 223 pp. \$7.50.

The Religion of Negro Protestants. Changing religious attitudes and practice. Ruby Funchess Johnston. Philosophical Library, New York, 1956. 224 pp. \$3.

History of American Technology. John W. Oliver. Ronald Press, New York, 1956. 676 pp. \$6.50.

Proceedings of the International Conference on the Peaceful Uses of Atomic Energy. vol. 15, *Applications of Radioactive Isotopes and Fission Products in Research and Industry*. 327 pp. \$7.50. vol. 16, *Record of the Conference*. 203 pp. \$5. United Nations, New York, 1956 (order from Columbia University Press, New York).

Textbook of Chemistry. Edward Mack, Jr., Alfred B. Garrett, Joseph F. Haskins, Frank H. Verhoek. Ginn, Boston, ed. 2, 1956. 854 pp. \$6.50.

Handbook of Mammals of Kansas. Misc. Publ. No. 7. Contribution from the State Biological Survey of Kansas. E. Raymond Hall. Museum of Natural History, University of Kansas, Lawrence, 1955. 303 pp. Paper, \$1.50; cloth, \$4.

Cultures Tropicales. vol. I, *Plantes Vivrières*. Raoul Cerighelli. Bailliere, Paris, 1955. 635 pp.

Gall Midges of Economic Importance. vol. VII, *Gall Midges of Cereal Crops*. H. F. Barnes. Lockwood, London, 1956. 261 pp. 21s.

Methods of Biochemical Analysis. vol. III. David Glick, Ed. Interscience, New York, 1956. 437 pp. \$9.50.

The Navajos. Ruth M. Underhill. University of Oklahoma Press, Norman, 1956. 299 pp. \$4.50.

Frequency Response. Rufus Oldenburger, Ed. Macmillan, New York, 1956. 372 pp. \$7.50.

The Science Teacher in Action. Helen Lawrence Merrill. Christopher, Boston, Mass., 1956. 84 pp. \$2.25.

Essays in Educology. Being the first report from the archives of the Association for the Preservation of Humor in Educational Workers. Lowry W. Harding. Brown, Dubuque, Iowa, 1956. 186 pp. \$2.50.

Index of Books Reviewed in SCIENCE, 15 April 1955 through 20 April 1956

Astronomy

Frontiers of Astronomy, F. Hoyle (Harper), 23 Mar. 1956, 512

Gas Dynamics of Cosmic Clouds, International Union of Theoretical and Applied Mechanics and International Astronomical Union (Interscience; North-Holland), 11 Nov. 1955, 928

Le Magnétisme des Corps Célestes, vol. 1, *Magnétisme Solaire et Stellaire Couronne Solaire et Lumière Zodiacale*; vol. 2, *Variations et Origine du Géomagnétisme*, pts. II and III of *Physique Cosmique*, A. Dauvillier (Hermann), 8 July 1955, 81

Principes Fondamentaux de Classification Stellaire, Centre National de la Recherche Scientifique (Le Centre), 25 Nov. 1955, 1023

Radio Astronomy, J. L. Pawsey and R. N. Bracewell (Oxford Univ. Press), 23 Dec. 1955, 1237

Transactions of the International Astronomical Union, P. Th. Oosterhoff, Ed. (Cambridge Univ. Press), 10 June 1955, 827

Variable Stars and Galactic Structure, C. Payne-Gaposchkin (Athlone), 19 Aug. 1955, 338

Biochemistry

Adrenal cortex, E. P. Ralli, Ed. (Josiah Macy, Jr., Foundation), 28 Oct. 1955, 835

Advances in Enzymology and Related Subjects of Biochemistry, F. F. Nord, Ed. (Interscience), 6 May 1955, 669

Advances in Protein Chemistry, vol. IX, M. L. Anson, K. Bailey, J. T. Edsall, Eds. (Academic), 19 Aug. 1955, 336

The Alkaloids: Chemistry and Physiology, R. H. F. Manske and H. L. Holmes, Eds. (Academic), 29 Apr. 1955, 637

Analysis of Development, B. H. Willier, P. A. Weiss, V. Hamburger, Eds. (Saunders), 12 Aug. 1955, 289

Biochemical Investigations in Diagnosis and Treatment, J. D. N. Nabarro (Little, Brown), 15 Apr. 1955, 565

Biochemistry and Physiology of Protozoa, vol. II, S. H. Hutner and A. Lwoff, Eds. (Academic), 26 Aug. 1955, 380

Biochemistry of the Aminosugars, P. W. Kent and M. W. Whitehouse (Academic), 16 Sept. 1955, 520

Biochemistry of the Developing Nervous System, H. Waelsch, Ed. (Academic), 6 Apr. 1956, 591

Biochemistry of Nitrogen, N. J. Toivonen, E. Tommila *et al.*, Eds. (Suomalainen Tiedeakatemia), 12 Aug. 1955, 290

The Biochemistry of Semen, T. Mann (Methuen; Wiley), 13 Apr. 1956, 637

Chemical Pathways of Metabolism, vol. I, D. M. Greenberg, Ed. (Academic), 1 July 1955, 38

The Chemistry of Lipids of Biochemical Significance, J. A. Lovern (Wiley), 14 Oct. 1955, 696

Ciba Foundation Symposium on Chemistry and Biology of Pteridines, G. E. W. Wolstenholme and M. Cameron, Eds. (Little, Brown), 26 Aug. 1955, 381

Colchicine—in Agriculture, Medicine, Biology, and Chemistry, O. J. Eigsti and