Book Reviews

The Design of Social Research. Russell L. Ackoff. Univ. of Chicago Press, Chicago, 1953. 420 pp. Illus. $7.50.

A famous economist once remarked that writing on methodology was like playing on a slide trombone; no one seemed to enjoy it except the person doing it. Ackoff has set out to disprove the validity of this dictum by producing a methodological textbook that is both an extremely useful presentation of recent developments in social science research and an intellectual challenge to the student and practitioner to do some hard thinking on the theoretical and practical issues involved in the scientific study of human social behavior.

Ackoff admirably strikes a judicious balance between the logical imperatives of properly designed research and the practical considerations involved in the actual conduct of social surveys. The first part of the book deals with basic definitions of designed research, the crucial significance of the proper formulation of the problem, and the logical basis of the idealized research design. The bulk of the volume is concerned with practical research procedures considered in their statistical, observational, and operational phases. The statistical chapters cover sampling, the logic of statistical procedures, and tests of hypotheses. The last two chapters call attention to the practical adjustments and administrative considerations that must be included in the research plan. In these chapters, the author draws heavily on his experience as survey statistician in the Bureau of the Census.

The volume is intended as a textbook; each chapter includes discussion topics, exercises, suggested readings, and bibliographic references. However, in several chapters, the effort to be comprehensive has led to a sacrifice of compactness. I believe, therefore, that this work will be more useful as a reference manual than as a systematic textbook. To those engaged in social research, it provides suggestive guidelines for the evaluation and selection of alternative methods. For the nonpractitioner, it offers insight and understanding of the problems faced and the methods utilized by those dedicated to the scientific study of social phenomena.

The author recognizes the difficulties in social research that stem from the absence of theory. Fortunately, as he points out, much significant social research to date has been performed by people whose intuition, judgment, and artistry were well in advance of their method and theoretical models. This volume is a testimonial to the many social scientists and statistical survey specialists whose concerted efforts are achieving, in modest measure, that reduction in empiricism which, in Conant's view, is the essence of science.

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Human Embryology. ed. 2. Bradley M. Patten. Blakiston, New York, 1953. 798 pp. Illus. + charts.

The chapter to chapter contents of this book are, with a few exceptions, unchanged from the preceding edition. The first eight chapters (pp. 1–232) are devoted to the general features of embryological development, the remaining ones (pp. 233–705) deal in sequence with the various organs and organ systems of the body. The book itself has been lengthened by only a few pages.

The original, very well chosen bibliography has been carried over unchanged from the preceding edition. To this a supplementary list, covering the 1945 to 1953 references, has been appended. A chapter to chapter grouping of both lists has been retained. Thus arranged, this bibliography well documents the text, of which it is an important and useful part.

Since the publication of the first edition of *Human Embryology,* a number of embryos have been added to the remarkable series already obtained by J. Rock and A. T. Hertig. This priceless new material has pushed back our horizon of unknown human development from the eleventh to the seventh day and has furnished valuable, although less complete, information concerning segmentation of the human embryo. These well-preserved human embryos, together with the complete Macaque series of the Carnegie Embryological Laboratory, constitute a superb background for an adequate interpretation of early human embryological development.

With such primate material now available, one may quite logically question the further dependence upon subprimate animal forms in reaching a satisfactory understanding of human development during the hitherto little understood first 2 wk of gestation.

It is evident that Patten does not believe in so radical a departure from time-honored custom, because, after an adequate description of this formative period, as shown by human embryos, he goes to some length in bringing the human embryo into conformity with that of the previously described pig. This is regrettable because, although the human being and the pig ultimately do become comparable in extra-embryonic structure, the origins of these similar parts are completely different and, so, should not be confused one with the other.

The handling of this, admittedly controversial, stage of human development is, in my opinion, the least satisfactory of any portion of an otherwise excellent textbook.

The recent work of H. Taussig and A. Blalock in correcting certain abnormalities of the great vessels of the heart, has led to the desirability of a more detailed explanation of the embryology of this type of abnormality. This Patten has quite successfully accomplished. Certain other features related to the heart and aortic arches have also been amplified.

In brief, this is a very useful book and is one that should rank high with students of human embryology.

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Radioisotope Techniques. Vol. I. Medical and Physiological Applications. Proceedings of the Isotope Techniques Conference, Oxford, July 1951, sponsored by the Atomic Energy Research Establishment. H. M. Stationery Office, London, 1953. vi +466 pp. Illus. + plates. £2 10s.

This conference was held at Oxford, July 16–20, 1951, for the purpose of bringing together the people who use isotopes in varied biological studies. The participants were chiefly British and French, with a sprinkling of men from Scandinavia, West Germany, Switzerland, Italy, Portugal, and Canada. The 98 papers presented were divided into a total of 30 separate sections under the broad headings of "Therapy and Diagnosis," "Biochemistry and Metabolic Studies," and "Plant Biochemistry." Only 10 papers were devoted to the latter, but all were extraordinarily interesting.

The general plan of each session was to have the first paper describe the scope and theory of the phase under consideration; one to four more shorter papers then dealt with special applications.

Since the data represent the state of advancement as of July 1951, it is difficult to pass any sound opinion on their present usefulness. Obviously, they are valuable from a historical point of view for those reviewing the subject or for those reading to revise the orientation of their experiments. Insofar as memory serves, the papers indicate that we in the United States were probably ahead of our British and Continental colleagues in instrumentation, in breadth of exploration of the over-all field, and in a few certain isolated applications. They, on the other hand, were well into the basic aspects of many problems, which, as reported in collected form here, it is a pleasure to read.

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Magnetic Cooling. C. G. B. Garrett. Harvard Univ. Press, Cambridge, Mass.; Wiley, New York, 1954. 110 pp. Illus. $4.50.

This book provides the first treatment of the subject of magnetic cooling since the appearance in 1940 of the celebrated monograph by Casimir. It is, in effect, a revised edition of the latter, with an entirely new chapter on cooperative effects and a thorough, if condensed, coverage of the experimental work done between 1940 and 1952 on both paramagnetics and other materials at temperatures below 1°K.

Garrett has favored the descriptive, or "physical," approach throughout, and his chapter on cooperative effects is especially interesting. As the publishers point out, "the author stresses those aspects of the subject with which he has been most closely associated," but fortunately these aspects are sufficiently numerous to maintain a reasonable balance. The section dealing with experiments on "other materials" below 1°K is probably shorter than the title of the book would suggest, although the author, by skillful abstraction of the essential features, has succeeded in covering in a short space the majority of the important experiments reported by late 1952. As a result, the reader is provided with a clear picture of the diversity of such researches and of the current rapid development in the field.

One notices a number of minor errors and points for criticism but few that warrant mention, especially in a brief review. Of the limited space available in a monograph, rather too much has been devoted to a discussion of the "purely academic" question of what is the correct expression for the energy of a magnetized specimen, and the important question of the validity of heating by gamma rays in calorimetric determinations is dismissed by a brief mention of the objection that has been lodged against the method. Absolute temperature determinations made in the millidegree region by different methods show wide disagreement (the latest work on potassium chromic alum provides a graphic example), and a short critical examination of possible causes would have been of value.

In summary, *Magnetic Cooling* is extremely "readable," timely, and useful to both students and research workers, especially so by reason of the provision throughout of a wealth of references to original publications. It should convey to the general reader a clear impression of a fascinating and rapidly expanding field and stimulate a wider appreciation of the potentialities of the temperature region below 1°K.

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Hypnotism: An Objective Study in Suggestibility. André M. Weitzenhoffer. Wiley, New York; Chapman & Hall, London, 1953. 380 pp. $6.

Since the publication in 1933 of C. L. Hull's classical study, *Hypnosis and Suggestibility: An Experimental Approach,* more than 500 reports and books related to the subject have been published. During this interim, new techniques have been devised and old techniques have been revised; much information formerly based on inconclusive experiments or personal history can now be recorded and evaluated in the light of accepted present-day research standards, and the applications of hypnosis have made apparent the need for a thorough, factual appraisal and integration of the data relevant to the basic phenomena of hypnosis and suggestibility.

André Weitzenhoffer's book successfully presents "a critical and integrated compilation and appraisal