biology and medicine." If one feels uneasy about Ingle's "basic assumptions" that "if conditions are the same, the results will be the same," or that "when other factors are constant, each variable permits but one maximum," he may find consolation in the "self-evident assumption" that "some degree of uncertainty, however slight, remains in all phenomena, and natural laws are presently regarded as statistical."

This book is evidently the outgrowth of a great deal of reading and reflection. It might have been prepared by perusing treatises on research and attempting to condense the gist of each into a single sentence, with subsequent grouping of the sentences into paragraphs and chapters. Thus, much that is valuable or indispensable to the presumptive scientist is here compressed into very little space. My big question is whether anyone can really understand this book unless he already understands the subjects dealt with. To select a single example from among dozens of possibilities, I wonder just who is going to profit from being told that "when the investigator wishes to compare more than two means, he can use a method called analysis of variance, which represents an extension of the concept of standard deviation."

Perhaps courses can be designed to explain, illustrate, and amplify this skeleton of a text. For such specialized use, this book can be highly recommended to all who are presently handicapped by lack of a book like this.

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**Punched Cards.** Their applications to science and industry. Robert S. Casey, James W. Perry, Madeline M. Berry, Allen Kent, Eds. Reinhold, New York; Chapman and Hall, London, ed. 2, 1958. x + 697 pp. $15.

This second edition of *Punched Cards* is a substantially reworked edition. The largest portion of additional material appears in part 2, which recounts applications of punched cards, as in the first edition, without critical evaluation.

Like the first edition, this is largely an accumulation of material that is available elsewhere in published form, and a good deal of material is included that has only slight relationship to the subject of the book. Examples of this type of material are the article by E. J. Crane and Charles L. Bernier of Chemical Abstracts Service, dealing with indexing and index searching (chapter 24); this, while it is first rate, has little to do with punched cards, either internally punched for machine handling or edge-notched for manual handling. Similarly, chapter 26, by Byron A. Soule, deals with searching the literature and has little if any relationship to the subject of the book. Neither is Ascher Opler's article (chapter 29), dealing with electronic data processing machines, connected by any but the most remote relationship.

The bibliography on uses of punched cards (chapter 30) ranges the whole field of documentation, and the increase in number of references does not directly represent an increase in the punched-card literature. The bibliography includes a good many articles on electronic data-processing machines; photographic inputs for digital computers; the use of filmsort microfilm insert cards that may or may not be punched (those discussed in some of the articles cited are definitely not); Uniterm indexing with manual card matching (this again has nothing to do with punched cards); preparation of bibliographies by mounting typewritten slips; and many similar topics that are not related to punched cards.

The first edition, even though it was an expensive clip-and-paste job, was justified in the earlier stage of this art because it brought together a good deal of the industrial, technical, and machine operation material dealing with the notched-card and punched-card art. Since this has been done once, there does not appear to be much justification for a second edition which merely does somewhat more of the same, while retaining in large measure the first edition's lack of clarity, lack of sense of proportion, and lack of originality in the material presented.

This is a conglomeration of miscellaneous documentation materials, roughly clustered about the subject of punched cards, rather than a book. It lacks the synthesis, evaluation, and orderly presentation that would be necessary to make a substantive contribution, and it does little more than bind into one volume, at a high price, unevaluated material of varying pertinence, most of which is already available elsewhere.

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**L. L. U. Translations Bulletin.** Department of Scientific and Industrial Research, London, 1959. 4s. 5d. (annual subscription, £2 13s.)

The purpose of the *L. L. U. Translation Bulletin* is to provide British scientists and engineers who are anxious to have details of current research in the U.S.S.R. with up-to-date information on the availability of Russian translations. It will be published monthly.

The *Bulletin* contains lists of books, journals, and other scientific papers which are now available or which are being translated and will become available in the near future. One section deals with cover-to-cover translations—a scheme for providing a complete Russian technical journal in the English language—and another gives details of the work being carried out by the National Science Foundation in the United States.

The *Bulletin* also contains articles on new scientific developments in the Soviet Union. It is contemplated that the *Bulletin* will cover other language translations in the near future.

Orders should be sent direct to Her Majesty's Stationery Office, P.O. Box 569, London, S.E.1.

## New Books

*Science in Schools.* Proceedings of a Conference under the auspices of the British Association for the Advancement of Science held 17–18 April 1958 at the Royal Geological Society, London, S.W.7. W. H. Perkins, Ed. Butterworths, London, 1958 (order from Butterworths, Toronto 6, Canada). $3. (Reviewed in *Science* **128**, 1132, 1958.)

*Social and Psychological Factors Affecting Fertility.* vol. 5. Concluding reports and summary of chief findings from the Indianapolis study. P. K. Whelpton and Clyde V. Kiser. Milbank Memorial Fund, New York, 1958. 285 pp. $1.

*Some Problems in Chemical Kinetics and Reactivity.* vol. I. N. N. Semenov. Translated by Michel Boudart. Princeton Univ. Press, Princeton, N.J., 1958. 239 pp. $4.50.

*The Stratigraphy of Western Australia.* J. R. H. McWhae, P. E. Playford, A. W. Lindner, B. F. Glenister, B. E. Balme. Melbourne Univ. Press, Melbourne, Australia, 1958 (order from Cambridge Univ. Press, New York 22). 161 pp. $8.50.

*Streptomycin and Dihydrostreptomycin.* Antibiotics Monogr., No. 10. Louis Weinstein and N. Joel Ehrenkranz. Medical Encyclopedia, New York, 1958. 116 pp. $4.

*Studies in Linear and Non-Linear Programming.* Kenneth J. Arrow, Leonid Hurwicz, Hirofumi Uzawa. Stanford Univ. Press, Stanford, Calif., 1958. 229 pp. $7.50.

*The Submicroscopic Organization and Function of Nerve Cells.* Proceedings of the Symposium held 15–22 March 1957 by the Venezuelan Institute of Neurology and Brain Research, Caracas. Academic Press, New York, 1958. 644 pp. Cloth, $14; paper, $12.

*Surface and Radiological Anatomy.* For students and general practitioners. A. B. Appleton, W. J. Hamilton, Ivan C. C. Tchaperoff. Fourth edition by W. J. Hamilton and G. Simon. Williams & Wilkins, Baltimore, ed. 4, 1958. 355 pp. $9.50.

*Ten Steps into Space.* A series of lectures sponsored by the Franklin Institute, March–May 1958, in Philadelphia. Monogr. No. 6. Journal of the Franklin Inst., Philadelphia, Pa., 1958. 202 pp.