as a treatise which will establish a grand new unified 'system' with carefully elaborated postulates, propositions, and formal logic." Unquestionably it is a difficult book to read and one easy to criticize. The editorial work has not been of high quality, consequently loose statements have been allowed to remain. For example, in the chapter on "Methods of analysis," we find, "A normal distribution, in turn, is what happens when an infinite number of cases are arrayed by pure chance on an infinite straight progression of some quality" (page 167), and "Z^2 (the square of the standard deviation in a normal distribution)" page 197). These and similar statements detract from the value of the author's ideas on the proper application of statistical methods.

Aside from its editorial shortcomings, this work suffers from lack of organization, as the author apparently realizes. The order of presentation consists of an "Introduction," in which medical sociology is defined as the behavioral science specialty which encompasses demography and is concerned with the study of mental disorders and chronic disease in the population, of hospital structure and utilization of medical services. The next chapter, on the "Matrix of man," is devoted to theoretical considerations and an attempt to integrate concepts of culture theory with those of physiology. For some reason, here, he feels he must attack Darwin and Freud. This chapter is followed by one which summarily reviews studies dealing with ageing and with diseases such as schizophrenia, alcoholism, and tuberculosis; by another mainly concerned with rules of conduct for the medical sociologists who become involved in interdisciplinary studies; by another which briefly discusses social changes and health problems; and, finally, by the chapter on "Methods of analysis" already mentioned.

In brief, this book is a series of essays based on the author's own work and reflections on the work of others, with a number of good, bad, and indifferent ideas in varying stages of maturation thrown at the reader. The author has obviously read widely in public health.

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Elementary Statistical Physics. C. Kittel. Wiley, New York; Chapman & Hall, London, 1958. x + 228 pp. $8.

The field of statistical mechanics and kinetic theory is one which finds many applications in the description of both microscopic and macroscopic physical phenomena. Much of the variety of application of these fields is reflected in this book—an expanded set of lecture notes—by Kittel. Unfortunately there are many topics of major interest that are not included, and those subjects that are treated are frequently given a sketchy analysis.

Several of the topics discussed here that are not found in any other book on statistical mechanics or kinetic theory are the concept of negative temperature, the representation of random noise by a Fourier series, the Wiener-Khintchine theorem, the Fokker-Planck equation, the Onsager relations for irreversible processes, and the Kramers-Kronig relations. The treatment given these topics, although brief, might be stimulating enough to prompt students to pursue the various topics further. However, there are many topics of at least equal or even greater importance that have been omitted. Among these are the theory of imperfect gases and cooperative phenomena and methods useful in the theory of liquids, such as the use of the radial distribution function and the methods pioneered by Kirkwood, Born, and Green.

It is difficult to recommend this book because of its many omissions and because of its uncritical approach to the problems of statistical physics. The statistical approach to physical problems is fraught with subtlety, little of which appears in this book. Perhaps a book on calculation methods of statistical physics is needed; a really good one would have to be far more complete than this, both in philosophy and in coverage.

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Information Indexing and Subject Cataloging: Alphabetic: Classified: Coordinate: Mechanical. John Metcalfe. Scarecrow Press, New York, 1957. 338 pp. $6.50.

The best advice that a trained librarian can come up with for the tyros determined to standardize and to mechanize the retrieval process is that old jingle from New York horsecar days (page 211),

"Punch brothers, punch, punch with care,
Punch in the presence of the passengaire."

To suggest caution is always good advice to give but awkward to follow. Of what should one be cautious? John Metcalfe, an eminent Australian librarian, has done his best to map the byways frequented by unwary librarians and now unduly popular among documentalists. This makes the advice even harder to take, for the past mistakes of others never seem similar to one's own newest and dearest project.

Until now, no trained librarian has deigned to define and to evaluate the new field of documentation in terms of library systems. As long as machines are designed to retrieve bibliographic references, the particular worth of library experience should be recognized and exploited. For hundreds of years, librarians have tusseled to get the right book to each and every would-be reader. They have acquired understanding of the tricky process whereby people ask for one thing while wanting another.

Metcalf starts with fundamentals. What is being classified or indexed? Is it existing information about various subjects, or are the subjects themselves being classified? On this simple-appearing dichotomy have foundered many retrieval systems, of both library and documentation types. The organization of all knowledge is the chimera that has seduced them. Metcalfe (page 199) takes J. W. Perry particularly to task on this point: "We do not choose a genus or class for such things as dogs because it is more natural, or scientific or permanent; this is the talk of Bliss and the metaphysical 'order of the sciences' school. We choose it because there is general literature on the genus and special literature on its species, whether it is a genus or class of animals, for example, by their anatomy or by their use."

Tailoring a classification scheme to the needs of a particular collection was the example set by the Library of Congress, and today this method still has many skillful practitioners [see S. Herner and R. S. Meyer, "Classifying and indexing for the special library," *Science* **125**, 799 (1957)].

Another necessary distinction is between finding information and communicating information, or between "indication" and "communication," as Metcalfe expresses it (page 25). Indication consists in describing information in a particular physical form, with word clues for the limited purposes of retrieval. Fortunately, it is not necessary to communicate the information itself in order to perform retrieval successfully.

There is a big difference, linguistically and logically, between providing references to documents where there is a high probability that the answer will be found and providing actual answers to a question. One difference is that the latter requires full sentence structure while the former does not. If this difference between indication and communication was generally understood by documentalists, it would not have been necessary for the logician Yehoshua Bar-Hillel to deliver a homily on the subject [Y. Bar-Hillel, "A Logician's reaction to recent theorizing on information search systems," *Am. Document.* **8**, 103 (1957)]. This article may seem to be a negative contribution, but then clarity and con-