international data programs, UNISIST activities, and, more usefully, the titles of papers presented at CODATA conferences. Many of the articles serve a useful introductory role in highlighting particular problem areas, such as the deleterious effects of inadequate proof reading on data reliability, the need for standardization in the choice of reference materials, and the fact that the U.S. Geological Survey currently has to maintain *circa* 1.7 million megabits of machine-readable geo-science data. The book satisfies the publisher's claim that it is an introductory survey but it may be of less value to those actually engaged in data activities. A list of numeric data bases could usefully have been included to update the review by Luedke *et al.* as could a more detailed index.

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WANGER, J. and LANDAU, R. N. (1980). Nonbibliographic on-line data base services, *Journal of the American Society for Information Science, 31,* 171–180.

LUEDKE, J. A., KOVACS, G. J. and FRIED, J. B. (1977). Numeric data bases and systems, *Annual Review of Information Science and Technology, 15,* 119–181.

Alan Pritchard, in collaboration with Glenn R. Wittig.
Bibliometrics: a bibliography and index, vol. 1: 1874–1959. Watford: ALLM Books, 1981. 138 pp. ISBN 0 9506784 0 6 £5.00

It is right that a bibliography of the literature of bibliometrics should be so organized as to assist bibliometric studies of that literature. Pritchard has certainly had that need very much in mind. In addition to the usual bibliographic details, organized in chapters for each decade, he provides coded appendices listing both the references to bibliometric papers within each of the 245 items he has seen, but also the items citing each of the 351 items listed. There is a ranked list of the 31 journals cited more than twice. The index includes subject keywords from the titles (or added) as well as authors and editors.

There is ample material here to study both the growth of the several literatures which make up bibliometrics, and also the citation patterns within them. Indeed it was his own thesis on the *Structure of Information Transfer Networks* which led to the compilation of the bibliography in the first place. The present volume extends only to 1959: other volumes to 1969 and to 1979 are promised.

The aim has been to include everything relating to the 'application of mathematics and statistical methods to books and other media of communication'. Doubtful items are in. The list started from some KWIC indexes and has been extended from other sources, including the reference lists within the items already listed. This may account for the fact that all but one of the 23 1874–1910 items relate to medical literature. It seems hard to believe that no other discipline published anything on the subject.

By far the most heavily cited paper is that by Gross & Gross on 'College Libraries and Chemical Education' in *Science* in 1927, with 63 citations, compared with 41 for Allen's 'Periodicals for Mathematicians' in the same journal for 1929. Of the 46 pre-1940 items cited only once, the average interval between publication and that citation was 9.2 years (range 0–37 years, 95 per

cent confidence limits of the mean ±2.08). It will be interesting to see how many of these older items become more cited now that the existence of this bibliography makes them more accessible.

In his introduction, Pritchard suggests that bibliometrics is in fact used more in social studies than in those of information science. This is a very tenable thesis and the bibliography is thus of interest to a much wider circle than librarians and information officers. The index entry under 'civilization', for example, leads to a 1923 paper by Hulme on 'Statistical bibliography in relation to the growth of modern civilization' cited 12 times between 1933/1958.

A. Sandison

Samuel Leinhardt (Editor).
Sociological methodology, 1981. San Francisco: Jossey-Bass, 1981. 456 pp.
ISBN 0 87589 490 9 £23.95.

This annual collection of original contributions is now sufficiently well-established to need little introduction to those using or studying social research methods. Now in its twelfth year it continues to reflect a concern with the statistical aspects of methods common to other publications of its sponsor, the American Sociological Association, rather than with more fundamental, philosophical aspects of methodology.

Within its self-imposed limits, however, the range of this collection is wide and it provides some useful ideas for the information researcher. Not least, it provides a reminder that methodology is a multi-disciplinary area, with possibilities for one field to learn from another.

The first paper presents this idea in an interesting fashion: in it Harrison C. White looks at an economic concept 'markets' from a sociological point of view 'as induced role structures'. The result is a view of a market as 'a social structure sustained by the self-interested choices of its constituent actors' derived from 'feedback on terms of trade between a fully connected clique of producers and aggregate buyers'. The analysis could be relevant in a world in which attempts are being made to establish a market (or markets) for information, but perhaps the paper is of more interest for the unexplored aspect—how information about terms of trade flows among producers.

Charles F. Manski in the second of these eleven papers goes in the opposite direction by showing how to apply econometric techniques in sociology. Specifically, the modelling of discrete-choice behaviour such as choosing a house, a job, a candidate to vote for, and so on. In other words, situations in which 'the data are observations of the decisions of persons or groups selecting alternatives from finite sets of mutually exclusive and exhaustive options'. Information sources may have some difficulty in meeting those last two criteria, but the paper shows that the analysis of choices in econometric terms is possible (the example given is the choice of a college by students) and, presumably, there exist methods that could be applied to the choice of information sources by an information seeker.

I have looked at these first two papers in a little detail simply to show how they are capable of generating ideas relevant to information science. The same can be said of those remaining and the paper by Cannell, Miller and Oksenberg is essential reading for anyone teaching the application of social research methods.

T.D.W.