less than the boiling point at one atmosphere.

In general, the book will be quite useful in process design calculations and will unquestionally reduce the time consuming step of searching the original literature for vapor pressures.

ROBERT C. REID
EDITOR
AIChE JOURNAL

Turbulence in Liquids, J. L. Zakin and G. K. Patterson, (Eds.), Department of Chemical Engineering, University of Missouri—Rolla (1972). 203 pages. $10.00.

This volume contains the papers presented at the 1971 biennial conference of the Rolla series devoted to turbulence in liquids. These symposia provide an excellent opportunity for researchers in this somewhat specialized area to discuss their work.

In 1971, sessions were labeled Measurement Techniques, Turbulent Burst Signatures, Pressure Fluctuations, Measurement and Analysis of Turbulence, Visual and Light Transmission Measurements, and Needed Data. Most sessions included an invited lecturer. Many papers emphasize experimental techniques, data analysis, and the supporting theory rather than a theoretical description of the turbulence observed. Since the experimental basis for liquid studies has generally been lacking until recent years, this emphasis is justified. Particular attention is given to hot film anemometry and visual techniques such as laser-Doppler velocimetry. Lacking from the collection of measurement technique papers, however, is a critical review of the state-of-the-art pinpointing the questions about liquid turbulence measurements that remain and suggesting work to be done. Discussions of individual papers are concerned with details and generally do not provide perspective.

A noteworthy paper by G. R. Offen, S. J. Kline, and W. C. Reynolds does review current investigations of turbulent shear with particular attention to turbulent bursts. This paper and several others raise concern about the interpretation of conditioned-sampling results.

As is often true for specialized symposia, some authors present only one phase of their work here with their major contribution published in the journal literature. However, incentive is provided by a collection such as this to refer elsewhere to related work.

The book is attractively bound in hardcover. However, the type size is too small to be read comfortably.

In balance, the volume provides a very useful discussion of some recent developments in the study of turbulence in liquids and will be welcomed by the large body of researchers having an interest in that area.

ALEXANDER SESONSKE
DEPARTMENT OF NUCLEAR ENGINEERING
PURDUE UNIVERSITY
WEST LAFAYETTE, INDIANA 47907

Industrial Source Sampling, David L. Brenchley, C. David Turley, and Raymond F. Yarmac, Ann Arbor Science Publishers, Michigan (1973). 481 pages. $18.00.

Each audience and reader sees a book differently. I wonder if the authors of this book agree upon the audience at which they have aimed. The preface says that Chapters 1 through 5 are aimed at administrators and that these chapters will be useful to engineers who plan and perform source tests. I doubt that. Those chapters will be most useful in a classroom. Specifically, Chapters 1 to 3 are too introductory. Some of the information may well be useful to administrators and engineers, but I doubt that they will read all of it.

Probably every reviewer sometimes wishes he could have had a hand in the writing. I would have organized this particular book another way certainly, with the very useful Chapter 8 titled "Errors in Source Sampling" located nearer "Computational Methods" which is in Chapter 15.

The list of symbols could have been a little tighter. It would have made reading easier if the authors had selected just one of P_b, P_{atm}, P_{bar} to represent atmospheric pressure.

All books, it seems, suffer from typographical errors. Most in this one are simply letter errors which cause no trouble for the reader, but here and there a sign is dropped as on page 42, or a word is changed, as when impacted particles become compacted particles. One wonders upon discovering one such error if meaning is changed somewhere with another error.

In spite of these negative comments, this book deserves space on the desk of anyone concerned with the subject of source sampling.

Chapters 9 through 14 effectively lead one through preparation for, and performance of, tests. Chapter 8 tells one what could be wrong with the results, and Chapter 15 is a very clear treatment of the necessary calculations associated with those tests. Chapters 16 to 18 assemble in one location a wealth of up-to-date information on equipment and methods for source testing and monitoring. Covered are both commercial instruments and some methods which, although still in development stage, appear especially promising.

My major complaint with the book is its unevenness. The chapters on industrial process information are necessarily quite superficial, while the chapter on error analyses is quite theoretical. That is not a fatal flaw, however, and the book can definitely be recommended.

HOWARD REIQUAM
BATTELLE
COLUMBUS LABORATORIES
COLUMBUS, OHIO

Applied Statistical Mechanics, Thomas M. Reed and Keith E. Gubbins, McGraw-Hill, New York (1973). 506 + xx pages. $18.50.

The authors have presented a current, accurate collection of methods of predicting properties employing the principles of statistical mechanics. The best available statistical mechanical models are presented along with comparisons of calculated and experimental values. The style is uniformly easy to read and the text is well interspersed with examples and figures.

We used this book as a base for discussion in a doctoral colloquium in the chemical engineering department at Texas Tech. Each participant reviewed one chapter at our weekly meetings. We formed the impression that many concepts which could be grasped fairly easily were thoroughly explained, while some of the more difficult were merely stated. We concluded that fruitful use of the book would require more than an elementary background in quantum mechanics and statistical mechanics. However, the calculational methods presented should prove to be excellent for the prediction of both thermodynamic and transport properties in the hands of an experienced statistical mechanician.

We found the book to be very broad in its coverage, both of systems considered (from ideal gases to liquid mix-

(*Continued on page 1087*)