

BOOKS

Thermodynamics, J. T. Vanderslice, H. W. Schamp, Jr., and E. A. Mason, Prentice-Hall, Englewood Cliffs, New Jersey (1965). 244 pages, \$7.95.

My first reaction to this book was: with all the texts now available on thermodynamics who needs another one? After reading it I changed my mind. First, one should realize that thermodynamics is a very broad subject and its basic concepts are so general and far reaching that they are not easy to grasp. One needs to approach the subject from many different viewpoints in order to gain an understanding of the underlying ideas. Second, this little book is not just another text on the subject but one which is different and helps to shed new light on well-established concepts.

It does not pretend to penetrate deeply into the many applications of thermodynamics. In fact it contains no applications to engineering as such. It presents a short review of the basic principles and makes a special attempt to offer clear and reasonably rigorous proofs of the basic laws and corollaries thereof and to state all definitions in as precise a manner as possible.

The emphasis is on what might be called the classical and historical approach. No attempt is made to introduce statistical or atomistic concepts. This reviewer believes that this is still the best approach to the subject and the one most easily understood by beginners.

There is an unusually illuminating treatment of systems which involve variables other than the common mechanical ones of pressure and volume to describe their state. I refer to the treatment of surface effects, radiation, magnetism, and electrochemistry.

At the end of each chapter is a list of relatively simple problems illustrating principles and answers to all of them are given in an appendix.

The last chapter is a very brief one which deals with the third law. Like the treatment of the first two laws this is developed from its historical background and I consider it one of the best short discussions of this law that I have seen.

The book seems to be free from errors. The only criticism I would offer is the lack of a table listing the nomenclature in one place for easy reference.

My conclusion is that this is an excellent short introduction to the basics of the subject and well suited to a one-semester course at the beginning level.

BARNETT F. DODGE
YALE UNIVERSITY

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