length of the path in the medium. Unfortunately the units of field strength are specified to be gauss and the symbol B is used for this quantity. This error is apt to be especially troublesome to students, since the symbol H is used in this expression in all of the standard references and, as is indicated in the second edition of the *American Institute of Physics Handbook*, the proper unit for field strength in this equation is the *oersted*. As a practical matter, it would be difficult to evaluate the magnetic induction (flux density) B in a solid specimen.

With this single exception, this reviewer is highly enthusiastic about *Radiation and Optics*. Not only should this book prove to be a successful text for a course in physical optics, but it will serve as a remarkably useful reference book.

Engineering Analogies. By Glenn Murphy, David J. Shippy, and H. L. Luo. 255 pp. Iowa State University Press, Ames, Iowa, 1963. $8.50.
Reviewed by ***Peter L. Balise,*** *University of Washington.*

Every science and engineering teacher makes some use of analogy, a most cogent means of aiding the understanding of students (and of instructors). The "systems" approach that is now receiving so much attention is based on analogy—the idea that a mathematical model can represent many diverse physical systems. Particularly with the increasing demands upon curricula, it is essential to use analogies if only for efficiency, not to mention their intellectual stimulation value.

However, most of us in teaching and research cannot find enough time to investigate in the breadth and depth required to use analogies widely and well. So it is very helpful to have several good books (Huskey & Korn, *Computer Handbook*, Section 9, McGraw-Hill; Karplus & Soroka, *Analog Methods*, McGraw-Hill; Murphy, *Similitude in Engineering*, Ronald).

This volume differs from the above in being a compilation with no general discussions of theory and by far the most complete compilation that has been published to my knowledge. The analogs include systems employing electricity, magnetism, optics, acoustics, heat transfer, fluids (liquid and gas), and a great variety of mechanical models such as bars and membranes. Of course there must be omissions (I happened to notice no mention of W. E. Rogers and some of A. D. Moore's work), but no significant area seems to be neglected.

The book is divided into about two hundred successive subsections (100: Flow of Fluids in Conduits, 120:Closed Conduits, 121:Unsteady Flow, 121B: Gas, 121BB:Acoustical Systems, 121-BBC:Electrical Analogy C), an arrangement that makes the table of contents a logical index, obviating need for an alphabetical index, usually considered essential by a reviewer. Two appendices give further classifications for the very important subject of potential fields. Each entry is a summary of a paper, with analogous equations, essentials of procedure, and diagrams where appropriate. For details one would usually refer to the original references, of which about 1500 are listed. There are also about 50 "General References," although very few of these are really general.

This work is a most significant contribution towards the worthwhile use of analogies (the mathematically similar relations) and analogs (the physical models).

Mécanique quantique, Vol. 2. By Albert Messiah. 544 pp. Dunod, Paris, 1960. 48 NF.

Quantum Mechanics. By Albert Messiah. Translated into English: Vol. 1, 504 pp., by G. M. Temmer, 1961, $15.00; Vol. 2, 529 pp., by J. Potter, 1963, $16.00. North-Holland, Amsterdam, and Interscience, New York.
Reviewed by ***Nicholas Chako,*** *Queens College.*

With the publication of the second volume, the author's plan for writing a modern treatise on quantum mechanics has been fulfilled.

As we had expected, Dr. Messiah has preserved the same high standard, both in the selection of the topics and the clarity of exposition as in the first volume of this treatise. In the second volume he has presented a detailed and comprehensive account of the most advanced parts of quantum mechanics, which are usually reserved for a second course in this field. Leaning more on the pedagogical side, the