tests and possible extensions of these. This is particularly true in the case of gravitational radiation. The author discusses not only the radiation from a spinning rod, first investigated by Einstein and Eddington many years ago, but also the more recent work of Foures-Bruhat, Brill, and Araki in which the field equations are regarded as imposing requirements on the initial values of the fields as well as predicting their future evolution.

In many ways the most interesting chapter in the book is the one on the detection and generation of gravitational waves, based almost entirely on the author's own work. There is a thorough discussion of a mass quadrupole detector consisting of two masses joined by a spring, and the average absorption cross section for gravitational radiation is calculated. The interaction of a crystal with a gravitational wave is also examined, and the special case in which the crystal is piezoelectric is shown to be worthy of test in the attempt to detect interstellar gravitational waves. Such experiments are planned at the University of Maryland together with others in which the earth itself is used as an antenna. The use of quartz resonators as radiators of gravitational waves is suggested. The magnitude of the task here confronting the acoustician who goes in for gravitation is indicated by the estimate of the author that, to radiate 10^{-15} ergs/sec at the fundamental frequency, 10^6 crystals would be necessary, each half an acoustic wave length thick and with a cross-sectional area of 50 cm^2! The signal-to-noise-ratio problem here is indeed formidable.

The author is to be congratulated on the effort he and his colleagues are devoting to this fascinating field of gravitational radiation. All physicists will wish them well and will look forward with interest to their results.

Boolean Algebra and Its Applications. By J. Eldon Whitesitt. 182 pp. Addison-Wesley Publishing Co., Inc., Reading, Mass., 1961. $6.75. *Reviewed by Peter L. Balise, University of Washington.*

THIS is a most lucid and well-balanced introduction to Boolean algebra, even for those with limited mathematical background. The algebra of sets is introduced in the first chapter and Chapter 7 extends it into fundamental probability theory. Chapter 2 is a formal presentation of Boolean algebra as an abstract system, independent of applications, and Chapter 3 provides a foundation in symbolic logic. Circuit algebra, probably the most important application, is dealt with in Chapters 4, 5, and 6. However in the preface Dr. Whitesitt emphasizes the three major applications, and thus dispels from the outset the commonly held limited views of Boolean algebra.

The purist may well object, but, in this reviewer's experience, an intuitive approach to a mathematical subject preceding rigorous treatment provides good motivation for mathematics majors. Thus the first chapter, with its immediate use of Venn diagrams, is an attractive introduction. Dr. Whitesitt bases only this chapter on intuition; the other applications follow the axiomatic presentation of Boolean algebra in Chapter 2. However, the entire book is supported by empathic explanations and excellent problems, leavened with humor, such as:

> The irascible husband carried his new bride across the threshold and then remarked, 'We'll get along fine, Honey, provided you observe the following rules: (a) At any meal when you do not serve bread, you must serve ice cream. (b) If you serve both bread and ice cream at the same meal, then you must not serve dill pickles. (c) If dill pickles are served, or bread is not served, then ice cream must not be served.' The bride was willing to comply, but was a bit confused about how to remember these somewhat involved rules. The problem was to simplify the rules.

Inevitably, because of its small size, the book treats no subject in detail and omits many topics. It will not satisfy every mathematician; and, for example, the mechanical engineer may object to the neglect of hydraulic circuits. But it is a very readable and informative text which should please most students and teachers.

Transformation de Fourier et Théorie des Distributions. By J. Arsac. 347 pp. Dunod, Paris, 1961. 48 NF. *Reviewed by J. Gillis, Weizmann Institute of Science.*

DISTRIBUTION theory represents one of those fundamentally new analytical ideas which are so extremely rare in mathematics. Up to now there have been three distinct approaches to the subject: the Fourier integral method of the French school, the essentially Cantorian method of Temple and Lighthill, and Mikusinski's symbolic approach. The book under review relies on the first of these and would appear to be intended primarily for physicists.

In point of fact, many physicists will find that the chief contribution of distribution theory is to justify what they have already been doing for years. There is a tale of an evangelical preacher who preached of heaven and hell with such zeal and success that he was rewarded by being allowed a short visit to both of these establishments. His first sermon on his return to earth began "Brethren, the lies which I have been telling you all these years are all true!"

However there is practical value in having such things justified; for example, that one can now know exactly what may be done with a delta function and how far one can go without falling into error. Heaviside rightly criticized the orthodox mathematicians who left problems unsolved rather than use divergent series to solve them. And he showed that the solutions obtained by his less orthodox methods were correct. But it is only since the modern theory of divergent series was developed by Borel, Hardy, Littlewood, and others that one could use the method scientifically, i.e., understand when the method would yield a correct result and why it would fail in other cases. One