ceptable to a publisher if it was on an undergraduate college level or if it was so all-embracing as to be almost encyclopedic. As a consequence, usually, only well-established and "safe" material was published. The few exceptions went under the name of "prestige books". This very unhealthy situation seems to be at last improving.

The book here reviewed is first in a new series "Investigations in Physics" which appears under the very promising editorship of Eugene Wigner and Robert Hofstadter. The subject of ferroelectricity is already over thirty-five years old but it is only quite recently that serious theoretical attempts have been made to understand this very basic phenomenon. Jaynes' booklet is an excellent survey of the diverse theories of ferroelectricity of $BaTiO_3$ with a particular emphasis on the electronic theory first proposed by Wigner and later more fully developed by Jaynes. The book is, in fact, an extensive revision of the latter author's doctoral thesis. Of particular merit is the objectivity and conscientiousness with which the author evaluates the pros and cons of various theories and their respective experimental justification. The treatment does not try to be smooth and superficially simple by avoiding more complicated mathematical matters, and thus the reader can actually follow the various deductions and steps. The five chapters "historical introduction and review of experimental facts", "review of theories of $BaTiO_3$", "thermodynamic treatment", "internal fields in crystals", and "electric polarization in crystals" are followed by an appendix on the numerical evaluation of the Lorentz factors and another on a matrix theorem.

The idea of publishing revised and enlarged versions of doctoral theses appears as an excellent way to make available the most recent achievements in science. We can look forward happily to many other books in this series.

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What is Science? By Norman Campbell. 192 pp. Dover Publications, Inc., New York, 1952. Cloth bound \$2.50, Paper bound \$1.25.

This small book gives a systematic explanation of the nature of science as contrasted with other forms of human knowledge. It deals almost entirely with pure science (rather than applied) and shows how science is distinguished from other intellectual and artistic pursuits such as philosophy, history, or music. The distinctive features of science are numerical measurements, laws concerning which universal agreement exists (or can, at least, in principle exist), and theories which express laws in simpler or more acceptable form. These notions are discussed in a very clear and lucid fashion, but the rather abstract point of view makes this book seem unsuitable for a reader without some prior acquaintance with science or philosophy or both. It was originally intended primarily for classes of the Workers' Educational Association, but, in this reviewer's opinion, is less likely to be successful in giving an idea of what science is about to most nontechnical readers than a discussion which presents more specific examples of science in action such as Conant's *Science and Common Sense*.

For a book first published in 1921 *What is Science?* has a surprisingly contemporary ring. One has to make an effort to keep in mind that some of the incidental comments refer to World War I rather than World War II. In one respect, however, ideas have really changed since 1921. The uncertainty principle and wave mechanics are a sufficiently radical development in the precise and universal laws of science that a fundamental discussion which does not include at least some reference to them now seems incomplete. Certainly if Campbell were writing today he would devote considerable attention to them. Despite this lack of book's clear and simple presentation of the main characteristics of science strongly recommend it, and Dover Publications are to be thanked for making it available at a reasonable price.

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Lectures on Cauchy's Problem in Linear Partial Differential Equations. By Jacques Hadamard. 316 pp. Dover Publications, Inc., New York, 1953. Clothbound \$3.50, paperbound \$1.70.

This book is a reprint of a volume, originally published by the Yale University Press, of Hadamard's lectures on hyperbolic differential equations, given at Yale in 1921. It is useful to have this fundamental analysis of the relation between equation type, boundary conditions, and solutions again generally available.

Since the advent of quantum theory the interest in solutions of a hyperbolic differential equation (such as the wave equation) has rather changed its emphasis away from the study of the effects of boundary conditions on specified surfaces. Nevertheless, the results of such classical studies are still of interest and some of the techniques used (such as that of the Green's function) have continuing, and even enhanced, utility.

The work reprinted here is one place, in the knowledge of the reviewer, where the effect of boundary conditions on the solution of hyperbolic equations is given in unified and general manner. Here is discussed, in some detail, the differences between hyperbolic and elliptic equations with respect to their characteristic surfaces, and the bearing this has on their differences with respect to boundary conditions. Here also are discussed, in considerable detail, the differences in behavior of waves in one, three, etc. dimensions and of waves in two, four, etc. dimensions.

The techniques used in the analyses and in the exposition are not often those used in modern theoretical physics. Nevertheless, the book is one which would well repay study by most theoretical physicists.

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