the remarkable insight of his work, which contained the seeds of most of the more recent developments. To say this is not to decry the achievements of later researchers who have used techniques of mathematical analysis or numerical solution which were not formerly available. Further progress must depend largely on a better understanding of the processes acting at the air–sea interface and of turbulence within the ocean. The last section deals with the special features of particular current systems. The discussion of the equatorial system includes a good account of our present knowledge of the equatorial undercurrents in all three oceans. A similar treatment is given of western and eastern boundary currents and of the Antarctic circumpolar current. The book ends with a comprehensive list of references and a good index. It is to be thoroughly recommended as a textbook for the student of physical oceanography, as an introduction to more advanced dynamical treatments or as a reference book for other marine scientists. K. F. BOWDEN

## MASERS AND LASERS

### Solid-State Masers

By E. B. Tucker. (Solid-State Physics.) Pp. xii + 96. (Routledge and Kegan Paul: London; Dover: New York, January 1969.) 8*s*.

MASERS and lasers have become such well known objects that the physical basis for their operation will be of interest to a far wider range of people than the specialist alone. Most physicists, either at undergraduate or research level, and many engineers and chemists, will be glad of the opportunity to read a brief survey of the subject, and this book satisfies just this requirement.

Whilst being careful not to weigh the reader down with unnecessary mathematics, the author has presented the physics of the maser in a way that brings out the logic of the system and the physical principles on which it is based. Such concepts as Planck's distribution law for the mean energy of an oscillator and the transition rates between states in a three level system are treated in just sufficient detail to allow someone with a modicum of university physics to understand the reasons for their being included.

About half the book is concerned with the background physics required for understanding maser action, including the properties of radiation, amplifiers and noise. The starting points are Maxwell's equations and a few elements of quantum theory. A clear description of the methods of inversion used in lasers is followed by a discussion of a few practical examples of solid state masers, and the book is rounded off with some general properties of masers.

Although the book fails to reach one hundred pages, and may contain rather too much introductory physics for the more advanced physicist, there cannot be many scientists who would regret spending eight shillings for this monograph. The style of the writing will appeal to those who prefer a direct approach rather than a colourful one, although there are one or two places where the directness does appear a little jerky. A. MILLINGTON

## GROUNDING IN NUCLEAR PHYSICS

### Nuclear Physics

An Introduction. By Haro Von Buttlar. Translated from the German by Fernando B. Morinigo. Pp. xii + 547. (Academic Press: New York and London, November 1968.) 135*s* 4*d*.

THE intention of the author is to "present the fundamentals of nuclear physics by means which are not beyond the grasp of undergraduate students . . .". In this particular case, this statement must be taken to imply a more limited scope than might be found in less thorough texts. The author aims to give a fairly complete, detailed, theoretical treatment of each topic at a moderately elementary level. Quite clearly, it is not possible to do justice in this way to some topics, but it remains arguable just how far this concern for detail should be allowed to dictate the choice of subject matter. For example, an excellent account of β-decay is given, but the non-conservation of parity in weak interactions is relegated to a brief, albeit lucid, discussion. It would seem preferable, in an introductory text, to give, in addition to the detailed treatments, extended qualitative discussions of the more important but difficult topics so that the student reader does not lose the correct balance in the overall broader picture of the subject. A related point, but of minor concern, is that no experimental details are included. Perhaps some indication of the theoretical bias could have been given in the title.

The arrangement of the book is straightforward and logical. The first part does not assume any knowledge of quantum mechanics, and starts with a review of the classical mechanics of collision and central force problems. It then goes on to deal with various topics, for example, mass defects, Q-equations, which can be given an adequate discussion at an elementary level without resort to quantum mechanics. The second part deals with the basic wave mechanics, and the final section applies to nuclear reactions and the properties of nuclei.

The success of the book must surely rest with the excellent manner in which the student is taken step by step through the derivations of many important formulae and the careful way in which the implications of the various theoretical models are discussed. It is done with as few breaks in the logic as possible, and where difficult steps, which cannot be covered in full, arise, adequate references to the relevant literature are given. The result is a self-contained textbook which covers meticulously and clearly much of the groundwork of nuclear physics. JOHN M. TITMAN

# Correspondence

### Mr Benn's Parish

SIR,—We must challenge a sweeping statement in *Nature* concerning the Concorde project. The leading editorial "Mr. Benn's Parish" (**221**, 297; 1969) states: "Even if, as everybody hopes, the outcome is a successful commercial aircraft, there is very little hope that the full cost of development will be recovered in sales". With the latter half of the sentence we are happy to agree; but it is our own hope that the Concorde will not be "a successful commercial aircraft".

We are not Anglophobes or Francophobes; we, and similar European groups[1], oppose impartially all commercial supersonic transport projects, including especially the projected American Boeing SST. We oppose them because, if successful, they will contaminate the human environment with a new form of noise pollution which will be exceedingly unpleasant to most people and virtually intolerable to many. Recently an expert in the field, Dr Karl D. Kryter, has analysed the extensive available data on human response to sonic booms from supersonic transport (*Science*, **163**, 359; 1969). He asks (p. 362), "Will the population of the United States 'pay' the price of the annoyance and discomfort of being exposed to the booms from the regular operation of planned SSTs?" and he