Nature and the Greeks. By Erwin Schrödinger. 96 pp. Cambridge University Press, New York, 1954. $2.00. *Reviewed by A. M. Thorndike, Brookhaven National Laboratory.*

The text of this short book is a quotation from Burnet's *Early Greek Philosophy*, that ". . . it is an adequate description of science to say that it is 'thinking about the world in the Greek way'. . . ." Schrödinger discusses a number of the ideas of current-day physics which originated in Greece during the fifth and sixth centuries B.C. At that time men first seriously proposed the idea that the world perceived by the senses was something that could be understood by human reason rather than an unpredictable plaything of unreasonable gods. The idea that mathematics might be the key to its understanding was introduced, and the idea that it is made up of invisible atoms which determine its observed characteristics. These examples are certainly basic to modern physics, but Schrödinger feels that, "Quantum theory, while extending atomism almost limitlessly, has at the same time plunged it into a crisis that is severer than most people are prepared to admit. On the whole the present crisis in modern basic science points to the necessity of revising its foundations down to very early layers." He suggests that by studying Greek science we may obtain some clue as to how the crisis can be resolved, perhaps better than by studying modern science in all its full refinement and complexity.

Nature and the Greeks is a stimulating book, but a tantalizing one since it is devoted to posing a question rather than answering it. One of the most tantalizing features is the incompleteness of our knowledge of what Greek scientists and philosophers really thought. Pythagoras, for example, is to us, at least, as much a construct of the scholar as is the quantum theory, and to confront one with the other seems to involve difficulties of a high order.

Astrophysics. Vol. II, Nuclear Transformations, Stellar Interiors, and Nebulae. By Lawrence H. Aller. 291 pp. The Ronald Press Co., New York, 1954. $12.00. *Reviewed by S. F. Singer, University of Maryland.*

The present volume is the companion to *The Atmospheres of the Sun and Stars* and shares all of its outstanding features. The treatment is of the textbook variety, well-suited to the level of a graduate or even an advanced undergraduate course or seminar. It is of particular value to the physicist who wants to acquaint himself with a vast body of astronomical and astrophysical information. The discussion is uncomplicated, the explanations direct, the physics background is presented (sometimes in a very elementary way). There are problems at the end of most chapters and carefully detailed references to important bibliographical sources. The technical execution of the book is excellent.

The essential value of the book is enhanced by its uniqueness. There exists no comparable treatment of these topics in a unified manner, certainly not one which is quite as up-to-date.

The book begins with a chapter on stellar interiors, with very brief and descriptive sections on radiative and convective energy transfer. Nuclear transformations and thermal nuclear reactions in stars are treated in considerable detail and include the most recent developments and data. The chapter on Model Stars (Stellar Models) starts with the classical work of Eddington and Chandrasekhar and leads up to the modern ideas on stellar evolution. The author carries through the actual computation of a model in which the star derives its energy from the carbon cycle. One section deals with the origin of elements. The following four chapters, which cover two-thirds of the book, present a wealth of well-integrated descriptive material, theory, and discussions of outstanding problems about the Cepheids and long-period variables, about stars with extended envelopes, novae and supernovae, about planetary nebulae, and about the interplanetary medium. The author has been able to include and integrate even some of the most recent developments (1954), particularly in the chapter on planetary nebulae.

It is perhaps inevitable that some topics had to be treated very lightly: the theory of turbulence, magnetohydrodynamics, the origin and generation of the cosmic radiations (both radio and corpuscular). In the words of the author, "the interstellar medium promises to play an increasingly important role in astrophysics", and the same might be said of the other topics. It may be premature to commit them to a textbook now; it would be a pleasure to see them discussed in a third volume of Dr. Aller's series on astrophysics.

Nuclear Reactors for Industry and Universities. Edited by Ernest H. Wakefield. 93 pp. Instruments Publishing Co., Pittsburgh, Pa. $2.00. *Reviewed by Arthur H. Snell, Oak Ridge National Laboratory.*

This little book consists of eight chapters by seven different authors, and it deals with various questions which must be faced by institutions which contemplate the construction of nuclear reactors. Despite the inclusion of the word "Industry" in the title, the writers obviously have research reactors for universities primarily in mind, and there is no discussion of what industries would be interested in reactors, nor why. The various authors are experienced at first hand in their fields, yet the book is uneven in quality and on the whole it fails to hit the mark. The reason lies on poor choice of material and superficiality of treatment. The discussion of the various kinds of reactors classifies them formally according to purpose, neutron energy, type of fuel, and so on, but this approach is sterile in terms of what you can *do* with a reactor. Surely it would be more fruitful to discuss in various cases the volumes available for experimentation, the neutron flux distributions, the flux densities at a given power, the relative fast and slow neutron fluxes, the availability of