

Throughout the discussion, recent evidence is introduced (as late as 1963) in support of the theories, and the reader is left with an appreciation of the wealth of experimental evidence gained in recent years.

The Scientific Age. The Impact of Science on Society. By L. V. Berkner. 137 pp. Yale University Press, New Haven, Connecticut, 1964. \$4.00.
Reviewed by R. B. Lindsay, Brown University.

We are continually being told that this is the age of science, which is remaking our world. We are also informed that countless people do not realize what is happening, and that as a result frustration, dissatisfaction, and anxiety abound in affluent and non-affluent countries alike. It is therefore not surprising that there is a large and growing body of literature discussing the various aspects of the impact of science on society. The volume under review is based on the Trumbull Lectures given at Yale University in 1964 by a distinguished scientist, who has long been gravely concerned over public misunderstanding of the role of science, and whose educational efforts to mitigate this situation are well known.

From its origin, the reader will hardly expect Dr. Berkner's book to be a coherent and well-organized treatise on the interaction of science and society. Rather it is a series of vignettes, tied together to be sure by a common thread, but emphasizing separate aspects of the whole problem. Thus the author in his opening chapter stresses the contribution which science through technology has made in certain countries of the world, notably in Western Europe and the United States, in bringing about an "economy of plenty". The availability of very large energy sources not merely to the wealthy and leisure class but to a large fraction of the whole population, with rapidly multiplying modes of energy transformation, has introduced the need for new attitudes toward social organization. This in turn is placing a great strain on the educational system, from the standpoint both of the production of the trained personnel needed to make the organization work and of the de-

velopment in the literate population as a whole of an adequate appreciation of the over-all meaning of science and technology.

The author is far from satisfied with our present educational system and presents a plea for a decided increase in the number of doctorates awarded by our graduate schools. His views here will be received with respect, even if they will not be regarded always as realistic. His own contribution in the establishment of the Graduate Research Center of the Southwest has been noteworthy and might well be emulated elsewhere.

The third chapter is concerned with the problems involved in the vast government support of science, particularly in the universities. Though he recognizes the usual difficulties that have been pointed out so many times, the author expresses a definite spirit of optimism with respect to their solution within the framework of the present system. Not all in the universities will share this optimism in the face of the wide diversity of procedures prevailing among the various modes of support available from different government agencies. However, these problems must be solved if scientific research is to flourish, since no one questions that its support must come in ever-increasing measure from government sources.

The reviewer has been happy to note the author's concern with that aspect of the impact of science which is not solely due to technology but rather to the influence of the *ideas* of science. He pays due attention to this matter in his chapter on science and philosophy, where he reviews the "two cultures" dichotomy made famous by C. P. Snow. While his plea to the humanist to try to understand science is reasonable, he probably places too little emphasis on the corollary obligations of the professional scientist to explain a little more clearly and agreeably to the humanist what science is all about.

In his final chapter the author stresses the need for what he calls a "strategy of maturity" in order to guarantee the continued maintenance and extension of an economy of plenty. This strategy in brief implies the application of science to all the mani-

fold problems of society. There is considerable emphasis on the role of free enterprise in the exploitation of this strategy. Even the most ardent advocate of this system must occasionally feel like expressing the hope that in the midst of our determination to press forward vigorously with the investigation of the secrets of the constitution of matter and with plans for putting a man on the moon as soon as possible, we should not overlook such significant practical applications of science as those to problems of water and air pollution, whose solution is so vital for human survival in a highly industrialized civilization.

Statistical Mechanics. An Advanced Course with Problems and Solutions. By Ryogo Kubo. 425 pp. (North-Holland, Amsterdam) Wiley, New York, 1965. \$19.00.

Reviewed by Donald A. McQuarrie, North American Aviation Science Center.

Statistical mechanics is an area which both physicists and chemists use and develop equally, and textbooks in the field should recognize this. Contrary to most previous statistical mechanics books written by physicists, this one contains many topics peculiar to chemistry or at least not usually studied by physicists, such as the lattice theory of solutions, chemical equilibria, polymers, absorption processes, and others. Each chapter starts with several pages of text, then has a number of worked examples amplifying the text, and then has a sizeable number of problems of increasing difficulty which are followed by their solutions worked out and discussed in detail. More than half the book is devoted to the problems and solutions.

Although the author states in the preface that the book is meant to be read without reference to other textbooks, the average or even above average student would be hard-pressed to go through the book alone. It should not be thought of as a beginning text, but as a problem supplement to existing texts or as an excellent text for an advanced course. Several factors make this an appealing book, one of them being the great diversity of subjects discussed, such as Doppler broadening, Drude theory, the Heisenberg model, defect solid state, dielectric re-