spective regarding scientific attitudes and a more realistic view of what science is, who scientists are, and what they do." Admitting their approach is informal and opinionated, they hope this approach will lead the reader to see science as a "delightful pastime rather than a grim and dreary way to earn a living."

They classify those who play the game of science as players, operators and bystanders. "Players are the good guys motivated by the intrinsic pleasures of science, rarely interested in discussing administrative positions, playing the game not primarily for knowledge . . . , but simply for the game itself . . . . The operators seem less gifted intellectually than the players, and the motivations and goals of the operators are primarily recognitions and accompanying rewards. . . . Bystanders are those who are not courageous enough to conduct research. . . ." Teachers and writers are considered bystanders.

The book also contains statements such as "physics has something to do with making bombs and the most violent enemies of science across the face of the earth tend to be those for whom the bomb is an object of reverence."

With the aid of such statements, and more generalizations, my overall impression is that it reads like an account from the *Ladies Home Journal*. The flavor of science can not be described by such a book.

EUGENIE V. MIELCZAREK
Associate Professor of Physics
George Mason College
University of Virginia

Spectral Properties of Disordered Chains And Lattices

By J. Hori
229 pp. Pergamon, New York, 1969. $10.00

Two significant developments in the study of simplified models of disordered systems occurred with the work of Paul Dean and Robert Borland at the National Physical Laboratory in the UK. Dean showed the existence of zeroes in the spectrum of normal modes of an isotopically disordered chain, and Borland proved a similar result for the energy density of electron states in a one-dimensional model of a liquid. The crash of falling Green functions was clearly audible on both sides of the Atlantic when these results were published.

Work of this sort is fully reviewed here by Jun'ichi Hori, who has himself contributed much to the field. The majority of his book is devoted to the transfer-matrix method and is consequently confined to discussion of one-dimensional systems, although one rather strained chapter does attempt the larger task of considering multidimensional systems. The mathematics is not always simple, and one wishes that the publisher had taken the trouble to help Hori with his English. They could also have speeded the production; the preface is dated August 1966, and no advances since then are reported.

This book will be valuable to the handful of workers in this narrow field who want to learn more of transfer-matrix methods. It would, however, have been just as useful and a little more appropriate as a review article in a journal.

PHILIP TAYLOR
Associate Professor of Physics
Case Western Reserve University

Linear Operators for Quantum Mechanics

By Thomas F. Jordan
144 pp. Wiley, New York, 1969. Cloth $7.50, paper $4.95

This book may best be described as a handbook on linear transformations in Hilbert space. It is intended to be—and should be—useful as a reference work to accompany graduate courses on quantum theory. The chapters are short, to the point and emphasize those theoretical aspects of quantum mechanics that physics students are likely to want amplified.

The first four chapters are purely mathematical in character, dealing with linear space and the basics of operator theory. The point of view is decidedly theoretical (as opposed to computational), a fact that is underscored by the presence of nothing but theorems on spectral families in the chapter "Diagonalizing Operators." The last three chapters discuss the role of linear operators in nonrelativistic quantum theory. Here we meet mathematical descriptions of density matrices (including Gleason's theorem), uncertainty relations and compatibility, superselection rules, equations of motion and the Galilei group.

Each of these topics is handled with some precision, but in all cases the rigor is reserved for the papers and books cited in footnotes. The mathematically-minded reader will generally find this procedure warranted, except possibly when the statement or proof of a theorem is sensitive to the presence of unbounded operators. In nearly every situation where trouble can arise, the rigorous justification is put off to a reference, and the reader may be left wondering just how valid the whole Hilbert space approach is for things like position and momentum operators. Of course, this problem is not unique to this volume: The whole question of unbounded operators is usually ignored in texts on quantum mechanics. Jordan at least points out that they do exist, and that one has to be careful when applying even the fundamental theorems.

Everyone who teaches a course on quantum mechanics has his preference as to how the mathematical portions should be handled. In my own view, *Linear Operators for Quantum Mechanics* can be useful as a ready reference and as an adjunct to an already reasonably precise textbook. As a matter of taste, I must say that I like the dictionary like character of the book; but I would prefer more than nine problems and more than a single page of bibliography. At any rate, whoever wishes a little grammar book on the mathematics of linear operators, which makes up in relevance what it may not have in depth, is likely to find his request has been filled admirably.

GARRISON SPOSITO
Associate Professor of Physics
Sonoma State College

Elements of Nuclear Physics

By Walter E. Meyerhof
279 pp. McGraw-Hill, New York, 1967. $9.95

Because I have used Walter E. Meyerhof's *Elements of Nuclear Physics* as a supplemental text in a nuclear-physics course, it is a pleasure to recommend it to others. Meyerhof, physics professor at Stanford University, has produced a readable, introductory account on his speciality.

The unifying theme is that of nuclear structure approached through elementary quantum mechanics and the concepts of the shell model. Even the chapters on radioactivity and nuclear