Brown. There is also a brief introductory chapter on the caloric theory, that provides a perspective on the point of view with regard to heat that Rumford so vigorously opposed. There are chapters on the propagation of heat in fluids (Rumford believed that this took place solely through the agency of convection), the production of heat by friction (the famous cannon-boring experiments), thermal expansion, the weight of heat, water as a nonconductor of heat, heat as a mode of motion and radiation. In reading these scientific papers, we marvel at the care and resourcefulness with which he did his experiments as well as the ingenuity he displayed in interpreting his results.

In a final chapter on Rumford's views of the nature of heat, the author takes pains to make clear that when Rumford associated heat with motion he meant *vibratory* motion, more or less regular in character and hence by no means random.

This selection of Rumford's writings will be of great value to historians and teachers of physics, and should clear up some prevalent misconceptions concerning ideas of the nature of heat in the late 1700's and early 1800's.

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The reviewer is Hazard Professor of Physics at Brown University and is currently engaged in a study of the evolution of the concept of energy.

Groups and diagrams

GROUP THEORY AND ELEMENTARY PARTICLES. By Penelope A. Rowlatt. 97 pp. American Elsevier, New York, 1966. $6.00

by Muneer A. Rashid

Interest in Lie-group theory is the natural outcome of the desire to understand the multiplet structure and interactions of the ever growing number of elementary particles. This interest had a boost with the discovery that the group SU(3) can indeed describe the approximate order of these entities. In fact the belief that perhaps the list of elementary particles can be curtailed tremendously by knowing the more elementary ones, has led to several attempts to understand the general structure of representations of semisimple Lie groups. Such understanding would help us select out those groups and representations that are nature's favorites for composite systems at possibly various levels of approximations.

Group Theory and Elementary Particles is addressed to the newcomers in this branch of theoretical physics and tries to summarize results of representation theory on the basis of Dynkin-Schouten diagrams. Proofs are generally omitted, although standard references are quoted. The reviewer very much wished to see some proofs in order to spare the readers having to consult the referred literature all the time. Another omission is the theory of noncompact groups, which is now very much in fashion. Perhaps in a book of this size, it must have been impossible to include a discussion of the infinite-dimensional representations.

Someone who wants to make good use of the book will have to try the examples given at the end of every chapter. The reviewer believes that without doing these examples one would not be in a position to grasp the techniques described in the book.

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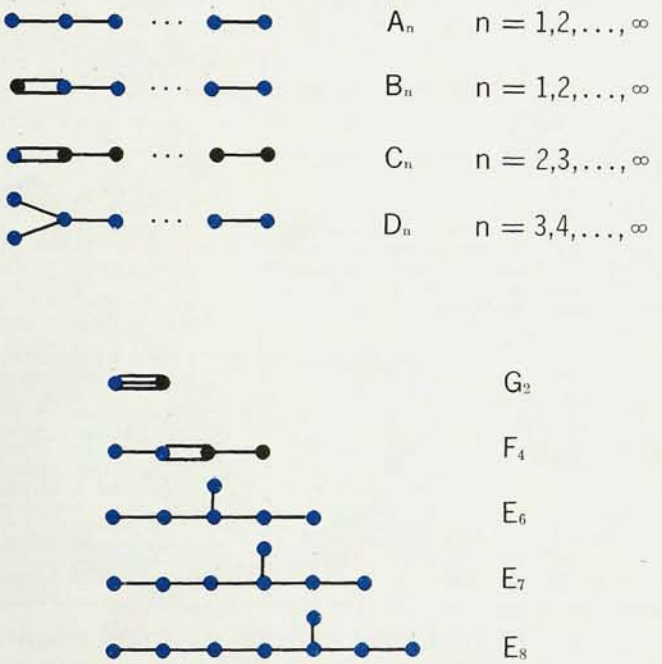
Muneer A. Rashid heads the theoretical physics division at the Atomic Energy Centre in Lahore, Pakistan.



DYNKIN-SCHOUTEN DIAGRAMS classify simple Lie algebras. The first four are infinite series of diagrams; the remainder are exceptional algebras. (From *Group Theory and Elementary Particles.*)

Uncompromisingly anti fields

INTRODUCTION TO STRONG INTERACTIONS. By David Park. 253 pp. W. A. Benjamin, New York, 1966. Cloth $9.00, paper $4.95

by John G. Taylor

This book is a useful addition to the range of intermediate-level books on particle physics. As its title suggests it is not an advanced textbook; nor is it a first step: prerequisites are a semester or two of quantum mechanics and some knowledge of the experimental side of particle physics.

The chapter headings are: (1) Introduction, (2) Quantized Fields, (3) Interactions, (4) Potential Scattering, Bound States and Resonances, (5) Formal Scattering Theory, (6) Relativistic Scattering Amplitudes, (7) Calculation of Scattering Amplitudes, (8) Dispersion Relations, (9) Invariance and Conservation Laws, (10) Symmetries of Strong Interactions, (11) The Eightfold Way. There are also useful exercises at the end of each