graphs that have been published have either ignored the changes in the formulation of the subject or have been rough compendia of papers from the literature. (Exceptions to this statement may be found in some of the more recent texts on quantum mechanics, in which very brief introductions to particle collision theory may be found.)

To fill this gap Goldberger and Watson seek, on the one hand, to provide the student with a more careful presentation of the physical description of scattering processes and, on the other hand, to provide the reader with a thorough exposure to the formal theory of scattering so as to enable him to read the current literature on the subject. The first aim is ably fulfilled in the first few chapters, using the language of wave packets. This formulation is most appropriate to particle scattering where the scattered particles are actually counted in finite-size counters. The remainder of the book is devoted to the second aim.

Following the introduction to the physical description, the formal theory of scattering is presented in detail, with some reliance on the previous, more physical presentation to clarify some of the more obscure points. The role of symmetry principles in scattering theory is also clearly presented and applied to the two-body problem, with both central and noncentral interaction forces. The presentation of the theory of the decay of unstable particles which follows serves to collect in a coherent form material that has been available only in the literature; some of the techniques developed here serve as a basis for a subsequent chapter on the detailed treatment of the scattering of systems of particles. The use of dispersion relations as an analytical tool in the treatment of scattering problems is then discussed in detail and applied to both nonrelativistic and relativistic problems, in particular, to the scattering of pi-mesons by nucleons.

Finally, a word of caution is necessary: this is not a book for the casual reader or the beginning graduate student. Its study, however, is a must for anyone interested in obtaining a greater insight into the theoretical description of collision phenomena. It is excellently written and will take its place with the other classics of the growing literature on physics.

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Molecular Genetics: An Introduction to Gene Action

Gene Action. Philip E. Hartman and Sigmund R. Suskind. Prentice-Hall, Englewood Cliffs, N.J., 1965. xiv + 158 pp. Illus. Paper, $2.95; cloth, $4.95.

The great and rapid changes that have occurred in certain areas of genetics during the last 20 years have made it impossible for any geneticist to keep up with even a small part of the advances being made in genetics. This has been particularly true of molecular genetics, however one may wish to define it. For the most part books and review articles covering this area have become outdated while in press. Now, however, signs of a plateau, not in cerebral and laboratory activity but in the rate of accumulation of significant basic facts that relate to the functioning of genes, are evident. The time has come to introduce gene action to the beginning student of genetics from the point of view of molecular genetics. This book, a volume in the Prentice-Hall Foundation of Modern Genetics Series, attempts to do just this, and it does it very well.

The authors present a well-written, clear discussion of protein structure and of protein synthesis as it is now believed to occur in vivo in cells under the dictation of DNA and messenger RNA. They also present clear descriptions of intragenic complementation and its probable significance, the current views of regulation of protein synthesis in microorganisms, the significance of the primary structure of proteins, and the current status of ideas and facts concerning the genetic code. The secondary consequences of gene action, as they are reflected in gene mutation, have been given short shrift, as has gene interaction; but this is understandable in view of the fact that the authors have made every attempt to present their analysis strictly from the molecular point of view.

The authors conclude with a short chapter on the application of the present knowledge of gene activity, as it has been determined in microorganisms, to problems, such as development, encountered in studying higher organisms.

The pedagogical value of this book, and of others of its type, remains to be tested by use in genetics courses. However, there is no doubt that it will enable any biologist who is not well acquainted with the field that it represents to obtain a logical, concise, authoritative description of our present ideas concerning gene action.

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Soils: Mineral Analysis, Morphology, Spatial Arrangement

Fabric and Mineral Analysis of Soils. Roy Brewer. Wiley, New York, 1964. xiv + 470 pp. Illus. $15.

This book, which is mainly an extension of the techniques of petrography to the descriptive study of soils (pedography), is a clear demonstration that the division of petrology and pedology into separate academic categories does not reflect any real barrier in the subject matter of earth science. Although intended mainly for students and practitioners of pedology, I strongly recommend the book to petrologists, for it puts the study of soils into a frame of reference with which they are familiar.

A third of the subject matter is concerned with mineral analysis; the remainder, with the morphology and spatial arrangements of soil features. Four chapters are used to summarize size, shape, and roundness of mineral grains, quantitative estimation of mineral proportions, and calculations of soil formation, mineral stability, and weathering. Much of this material is based on the work of sedimentary petrographers. Brewer devotes nine chapters to discussion of the analysis of structural and textural features observable in soils; these chapters are the culmination of his original work in this field during the last decade or so. The concluding chapter relates fabric and mineral analysis to soil genesis and classification. A useful appendix describes methods of collecting, preparing, and analyzing soil samples.

The treatment of fabric is largely descriptive, for the chapters are arranged by pedological features rather than by generic soil types. Although Brewer treats features that are ob-