

plication of the Glauber theory to the study of the influence of correlations on electromagnetic form factors and on nuclear scattering at very high energies has not been included.

There is some hope for understanding more about elementary-particle interactions from the study of their interactions with complex nuclei. For example, the study of hypernuclei provides some information concerning the interaction between the Λ -particle and the nucleon, information which is not obtainable from scattering experiments because of the short lifetime of the Λ -particle. Information concerning the Λ - Λ interaction may become accessible through the study of recently observed $\Lambda\Lambda$ hypernuclei. (The theoretical and experimental aspects of hypernuclear physics are reviewed by R. H. Dalitz and J. Sacton.)

D. H. Wilkinson provides a particularly clear review of methods for studying the properties of the nuclear surface. Questions pertaining to the nuclear charge and matter distribution in spherical and nonspherical nuclei are discussed, as well as the possible existence of correlated substructures, similar to α -particles, in the nuclear surface. It is interesting that measurements of nuclear size parameters from elastic electron scattering experiments and from μ -meson studies are in good agreement. Wilkinson expresses the hope that information obtained from the study of muonic x-rays and electron scattering may ultimately lead to a unique parameterization of the nuclear charged distribution.

The experimental and theoretical aspects of electron scattering, muon capture, and muonic x-rays are extensively discussed by J. D. Walecka, R. Engfer, C. Daum, U. Amaldi, Jr., and D. B. Isabelle. High-energy scattering theory is treated by I. S. Shapiro with the use of Feynman graphs. H. Feshbach discusses the semiclassical approach to high-energy scattering and provides some extensions of the Glauber theory.

The construction of optical potentials for elementary particles provides an interesting challenge for the theorist; research on the optical potential for pions is reported by T. E. O. Ericson. D. Koltun presents a short summary of some of his work on pion capture. There is also a discussion of cosmic rays by D. W. Sciama, and some new accelerator programs are briefly summarized by D. E. Nagle. The introduc-

tion to the volume is provided by A. de Shalit, who presents some speculations on the quark model.

Although much of the material in these lectures is available elsewhere in the literature, it is quite useful to have review articles that summarize the advances made in experiment and theory and point to the open questions. For this the volume will be useful to the student or the research scientist.

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