is mentioned in connection with the experiments of H. Boersch and coworkers [*Z. Physik*, **187**, 97 (1965)] has experienced vigorous development in both experimental and theoretical aspects beginning in 1967, but is not mentioned.

It is unfortunate that the term "resonance radiation" is applied by the author to that radiation which arises when a uniformly moving fast charged particle passes through a medium whose dielectric or magnetic properties vary periodically in space. The same term is applied, beginning in the early days of atomic physics, to describe the radiation at a given wavelength emitted by an atom which has absorbed light of the same wavelength from an external source.

Despite the minor defects mentioned above, this monograph represents a valuable addition to the literature. The typography and binding are attractive and appear quite durable. It should be in the library of all serious workers in this field.

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Scattering Theory: The Quantum Theory on Nonrelativistic Collisions

Author	John R. Taylor
Publisher	John Wiley & Sons, Inc. (1972)
Pages	477
Price	$14.95
Reviewer	Marcel Coz

The scope of *Scattering Theory: The Quantum Theory on Nonrelativistic Collisions* is defined in the Preface: the book is intended for the student who wants a thorough grounding in scattering theory and has taken a one-year graduate course in quantum mechanics. The book is therefore a textbook and any judgment on its value depends on this basic fact.

As the author points out, the book results from a course he has already taught; it was quite easy for me to verify this assertion. Prof. Taylor, a careful teacher, is not afraid of pedestrian methods (see, for instance, p. 50). From time to time one finds in his text traces of the verbal style a professor uses in front of his classroom; one reads "celebrated formula" (p. 4), "celebrated connection" (p. 60), "we apply the famous trick" (p. 14).

Mr. Taylor is convinced that a rigorous treatment of the scattering problem is important and that emphasis must be given to the time-dependent formulation. I must acknowledge that he succeeds in transmitting his conviction. The sections on the scattering operator and S-matrix are excellent and justify Prof. Taylor's decision to emphasize the time-dependent formulation. Mr. Taylor is obviously familiar with the mathematical treatment of the scattering problem as it has been proposed by Jauch and his followers; I express my surprise not to see the name of Jauch[1] mentioned in a book his work has made possible. A second part deserves special compliments; it concerns the study of the analytical properties of the S-matrix.

Within the framework of a one-year course a choice must be made among the material. Nothing is therefore said on Fredholm's methods and the condition of their validity, nothing on the inverse problem, nothing on the few-body problem.

Reading the almost 500-p. volume, I have noted some inaccuracies, but not very many. To give an example of their importance, on p. 115 one finds the identity

$$(u \cdot \sigma)(v \cdot \sigma) = uv + i(u \times v)\sigma$$

Clearly this equation requires the existence of commutation relations between u, v, σ; this requirement is not mentioned. However in this case the formula is applied correctly.

I would call attention to two interesting references. With respect to p. 82, Jauch[2] has proved the existence of a Hamiltonian under the conditions of causality, homogeneity, and continuity; with reference to p. 266, M. C. Barthelemy[3] has considered the analyticity of the solutions for the Dirac equation. I would be surprised if she has not looked at the Jost solutions.

To conclude, in spite of its omissions this is a good textbook and I have enjoyed reading it. (Although I did not go over the problems at the end of each chapter, a glance convinced me of their relevance.)

REFERENCES

1. J. M. JAUCH, *Helv. Phys. Act.*, **31**, 127 (1958); **31**, 666 (1958).

2. J. M. JAUCH in *Dispersion Relations*, G. R. SCREATON, Ed., p. 203, Oliver and Boyd, Edinburgh (1961).

3. M. C. BARTHELEMY, *Ann. Inst. Henri Poincare*, **6**, 365 (1967), **7**, 115 (1967); *C. R. Ac. Sc., Paris*, **268**, 521 (1969).

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Microscopic Theory of the Nucleus

Authors	Judah M. Eisenberg and Walter Greiner
Publisher	American Elsevier Publishing Co., Inc.
Pages	519
Price	$33.50
Reviewer	Richard K. Osborn

The microscopic theory of the nucleus consists of the attempt to derive the details of the structure of many-nucleon nuclei from an assumed two-nucleon interaction. This is obviously an important task, although at the present time a somewhat frustrating one since the nucleon-nucleon interaction is not