

just a "zeroth approximation" they do have a ring of truth. In particular, they should have an impact right now during our soul-searching efforts to learn how to improve our educational curricula and ideals. Since it may be too late to wait for the new generation to bridge the cultural gap, Sir Charles' booklet is eminently suitable to appeal to those who have completed their formal education.

**Abhandlungen aus dem Fritz-Haber-Institut, Vol. 36 (1959).** 590 pp. Fritz-Haber-Institut der Max-Planck-Gesellschaft, Berlin, 1960. Paperbound. *Reviewed by L. Marton, National Bureau of Standards.*

**T**HE Fritz Haber Institute of the Max-Planck-Gesellschaft is an institute of physical chemistry. Every year the Institute issues a bound volume of its reprints of the previous year. Last year's compilation, as compared with preceding ones, is rather voluminous.

Forty-nine papers comprise this 1959 volume, ranging all the way from almost pure chemistry to applied mathematics. Crystallography, in its pure and applied forms, takes a prominent place in the reprints. In fact, judging by the present volume alone, the uninitiated reader might assume that the activities of the Institute are mainly crystallographic and never be aware of the fact that the Institute has a strong electron-microscopy group and is also active in field-emission microscopy. The only paper which comes close to the latter activities is a review by Ruska. There are absolutely no original contributions in this volume. Its usefulness is likely to be confined to theoretical and applied crystallographers.

**Techniques of Non-Destructive Testing.** C. A. Hogarth and J. Blitz, eds. 216 pp. Butterworth, Inc., Washington, D. C., 1960. \$7.50. *Reviewed by Walter G. Mayer, Michigan State University.*

**N**ONDESTRUCTIVE testing is of great interest to a large number of engineers and manufacturers. Therefore it is highly desirable to have a technically accurate and useful source of information on the subject. This book contributes little in this respect.

The volume contains eleven chapters written by twelve authors. The technical sections deal with the application of radiology and ultrasonics, and with magnetic, eddy-current, and penetrant techniques. There is also a well-written chapter by R. W. Powell and R. P. Tye on thermal comparators pointing out some new possibilities in the field of nondestructive testing. Some remarks on the use of the various techniques in an inspection organization, together with observations concerning the training and competence of staff and the setting of standards, form the concluding chapter.

Only the sections on radiology and ultrasonics are preceded by chapters on the scientific backgrounds of these two techniques. There is, however, a regrettable lack of balance between these related chapters; it seems that the authors of the two chapters on techniques do



## "PROBLEMS IN QUANTUM MECHANICS"

by I. I. Goldman  
and V. D. Krivchenkov

Translated from the Russian by  
E. Marquit and E. Lepa

A comprehensive collection of problems in non-relativistic quantum mechanics, with answers and completely worked-out solutions to each problem. It may be used as a supplement to any textbook in quantum mechanics; it is also suitable for use in conjunction with courses in atomic and nuclear physics, mathematical methods in physics, quantum statistics, or applied differential equations.

The book brings together problems which have been solved at seminars or given as homework assignments for students at the Moscow State University. The basic textbook for these students was Landau-Lifshitz' *Quantum Mechanics—Nonrelativistic Theory*. However, this book may readily be used with any quantum mechanics text.

Perhaps the most difficult aspect of quantum mechanics to master is the matrix form. Therefore, in the preparation of this book, a great deal of attention was paid to the construction of perturbation matrices and their diagonalization. A relatively large amount of space has been devoted to auxiliary problems on angular momentum and spin, since a serious study of quantum mechanics is not possible without an understanding of these basic notions. Problems of various degrees of difficulty are included in the book, some of which require comparatively lengthy calculations.

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