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tion", the author imposes upon himself many details of illustration, organization, and summarization, which are normally the duties of the classroom instructor.

In *College Physics*, Franklin Miller, Jr., has gone far toward achieving his aims. Interspersed with the usual text material are to be found almost every conceivable student help: chapter summaries, check lists of terms, illustrative problems, mathematical review, lessons on the operation of the slide rule, review questions, and references for collateral reading. Only a sample final examination seems to be lacking from the extensive list of devices provided here to assist the student to organize his study and evaluate his progress.

Two hundred and twenty-two worked examples, introduced at various points in the text, demonstrate how equations are selected and quantities manipulated in typical physics problems. The author even shows some typical student errors in problem-solving, e. g., the unthinking application of a proportion or the misuse of a conservation equation. Seven hundred and forty-eight problems are presented for the students' own efforts. These are found in three degrees of difficulty, ranging from those requiring only substitution in a formula to the more complicated situations requiring use of tabular data, intermediate computations, and assumptions of approximations. Odd-numbered problems are provided with answers; no mathematics beyond simple algebra is required.

The profusion of teaching aids to be found in *College Physics* does not signify that the author has subordinated subject matter to instructional technique, nor should it be inferred that the content of the textbook has been watered-down or sugar-coated. An intriguing cover design may lure the student into a textbook for its explanation, a profusion of illustrations may help to bind his attention there, and a multiplicity of assists from the author may help him past some of the difficulties which he encounters, but for a textbook to accomplish its purpose the student must feel that it challenges his ability and rewards his efforts. At the level of the course for which *College Physics* is intended, this textbook is satisfactorily comprehensive and rigorous to accomplish both ends.

Sur la Résonance magnétique: 86th Internat'l Colloq. of CNRS (Paris, July 1958). 116 pp. Editions du Centre National de la Recherche Scientifique, Paris, France, 1958. Paperbound 1200 fr. Reviewed by Lawrence H. Bennett, National Bureau of Standards.

TWENTY-THREE of the twenty-five papers presented at the International Colloquium on Magnetic Resonance, held in Paris on July 7-9, 1958, are reproduced here in French. The texts of the other two papers given at the colloquium are omitted. In addition to the résumé of each paper, there is an abstract or Inhaltsübersicht.

Two of the presentations are concerned with multiple quantum transitions. The remainder deal with

some form of double or multiple magnetic resonance, where two or more high-frequency fields are applied, either simultaneously or successively.

The ENDOR (electron nuclear double resonance) technique is described by Feher, and also by Bleaney. Abragam's method of dynamic polarization is reported on by Solomon and by Combrisson. Kaplan and Hahn describe a pulse experiment in which the change in the relaxation time of a nuclear spin species is observed when a second nuclear species is excited. There are several papers concerned with optical pumping and optical detection by Bloom, Cagnac, Kruger, and others. The effect of multiple successive oscillatory fields on molecular beam magnetic resonances is described by Ramsey.

Although most of the work presented has already been published elsewhere, the usefulness of the colloquium report is enhanced by the discussion by the participants after nearly every paper.

The volume is paperbound but the printing is clear. A group photograph of the conferees is reproduced.

Matrix Calculus (2nd Revised Ed.). By E. Bodewig. 452 pp. (North-Holland) Interscience Publishers, Inc., New York, 1959. \$9.50. Reviewed by George Weiss, *Institute for Fluid Dynamics and Applied Mathematics, University of Maryland.*

THIS is the second edition of a work which is almost encyclopedic in its cataloguing of numerical methods for matrix problems. The present edition differs from the first only in the addition of new material which includes a discussion of Rutishauser's LR-algorithm for the determination of eigenvalues, Wilkinson's method for the speeding up of iteration procedures for the eigenvalue problems, and other, smaller discussions. The new material enhances the value of this book for those who have to deal in a practical way with matrix calculations. A review of the first edition is to be found in the March 1957 edition of *Physics Today*.

Combustion and Propulsion: Third AGARD Colloq. (Palermo, Sicily, March 1958). Edited by M. W. Thring, J. Fabri, O. Lutz, A. H. Lefebvre. 614 pp. Pergamon Press, London & New York, 1958. \$20.00. Reviewed by R. E. Street, *University of Washington.*

THE Combustion Panel of AGARD (Advisory Group for Aeronautical Research and Development, North Atlantic Treaty Organization) continues to hold these colloquia at a two- or three-year interval in order to enable different research workers in the aeronautical aspects of combustion and propulsion to present critical surveys of progress in their specialized fields. The proceedings are published both as a permanent record and to enable workers in the field who were not in attendance to learn of the progress reported. In many ways these collected surveys are similar to the *Reviews of Modern Physics*; they also serve

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