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starts with a stated problem or question in nature to be investigated. This is then followed by a short paragraph giving a brief overview of the total procedure. An experiment is then devised to enable the student to find the answer. Where possible, experiments are made quantitative with the construction of graphs and data tables used to record and interpret results.

A teacher's manual has been prepared to give valuable suggestions for general laboratory procedures, safety precautions, problem reporting, and evaluation of student reports. Acceptable results and answers to questions are given, making it unnecessary for the teacher to conduct the experiment before giving it to the students.

Any high school chemistry teacher who is not familiar with this manual should certainly give it careful attention.

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CHEMISTRY IN NON-AQUEOUS SOLVENTS, Harry H. Sisler; Calvin A. VanderWerf, Ed., 119 pp., \$1.95, Reinhold Publishing Corporation, New York, 1961.

This is one of a series of paperback books designed as supplementary material for the more able chemistry student. The complete series, *Selected Topics in Modern Chemistry*, would be most useful for advanced high school students or in a seminar program for the enrichment of any undergraduate course. Because of the large number of non-aqueous solvents which have been studied, the author has chosen to present only the characteristics of four; liquid ammonia, 100% sulfuric acid, liquid dinitrogen tetroxide, and liquid sulfur dioxide, and treat them as representative models. These were selected as typical examples because the first, liquid ammonia, is much more basic than the most commonly used solvent, water, and the second, sulfuric acid, is much more acidic. Since they both contain hydrogen, the Brønsted definition of acids and bases is used in discussing the role of the solvent in chemical reactions. The final two contain no hydrogen; therefore the reactions are explained in terms of the Lewis definition of acids and bases.

Considerable attention is given to the role of the solvent in all chemical reactions and to the scope of non-aqueous solvent chemistry.

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LABORATORY GUIDE FOR GENERAL CHEMISTRY,
A RESEARCH APPROACH, Henry S. Gates, 97