

LABORATORY EXPERIMENTS. For students in general chemistry in the University of Wisconsin. BY VICTOR LENHER. Second Edition. Madison, Wis. : Tracy, Gibbs & Co. 1903. pp. 31. Price, 50 cents.

The experiments prescribed begin with exercises upon glass bending and cutting, and upon chemical and physical change, after which the elements are taken up in the following order: hydrogen, chlorine, oxygen, nitrogen, carbon, the halogens, sulphur, the phosphorus group, silicon, boron, the alkalies, the alkaline earths, magnesium, zinc, cadmium, mercury, copper, silver, tin, lead, nickel, cobalt, iron, aluminum, chromium, and manganese. The treatment is essentially qualitative, although a few quantitative experiments have been introduced.

The manual contains no prefatory statements, but is presumably prepared to accompany the author's lecture and classroom instruction, and can, therefore, hardly be judged by itself. It contains little or nothing which can be regarded as unique, but the student who has conscientiously completed the experiments as prescribed, and given the explanations asked for, should have acquired a considerable knowledge of descriptive chemistry and a useful training in accurate observation.

The alternate (right-hand) pages of the book are blank; the typography leaves something to be desired. H. P. TALBOT.

A MANUAL OF QUALITATIVE CHEMICAL ANALYSIS. BY J. F. MCGREGORY. Boston: Ginn & Co. 1903. 133 pp. Price, \$1.10.

The book is divided into four parts. Part I gives the usual reactions of the common metals and acids. Part II describes blowpipe analysis very briefly. Part III takes up systematic methods for the metals and acids in solution. Part IV is devoted to the examination of "complex" solids. The author makes no use of the modern theory of solution, stating in the preface: "That however valuable the study of this subject may be to the chemist, its introduction as a basis of study in qualitative analysis is not to be recommended." On looking through the book, nothing new or original is to be found, unless  $(\text{NH}_4)_3\text{PO}_4(\text{MoO}_3)_{10}$  as the formula of ammonium phosphomolybdate and some other errors should be so considered.

As the reviewer believes that qualitative analysis should be taught from the standpoint of reactions of ions, this book does not appeal favorably to him, and the question, which naturally