

LABORATORY NOTES ON PRACTICAL METALLURGY. By WALTER MACFARLANE. New York: Longmans, Green & Co. x + 40 pp.

This book is designed to be a graduated series of exercises leading up to the various metallurgical processes. It begins with the melting and pouring of metals and alloys, gives experiments in cupellation, scorification and liquation; the reduction and fusibility of silicates; the assay of silver and gold ores; and the analysis of fuels.

There seems to be much duplication of experiments all illustrating the same principle, especially in the first part of the book, many of which might have been performed in an elementary course in chemistry. The directions are all detailed, but this is probably necessary in an elementary book. The interpretation of results is left entirely to the student and with proper guidance from the instructor should lead to valuable results, especially so since the experiments are logically arranged.

The melting-points of the metals given on page 123 do not give the most recent values, and in the case of manganese is distinctly wrong, giving 1900° instead of the Heraeus value of 1245° .

HENRY FAY.

A LABORATORY CHEMISTRY. By RICHARD B. MOORE, Instructor in Chemistry, University of Missouri. Philadelphia and London: J. B. Lippincott Company. 1904. 194 pp.

The author of this book is of the opinion that the chief weakness in the training of students of elementary chemistry in the secondary schools is a lack of drill in the scientific method, and an almost entire neglect of the theoretical principles which underlie the science. He has emphasized, accordingly, in this book the more important theories of inorganic chemistry and the physical principles underlying these theories. Almost one-half of the book is devoted to a consideration of that part of physics which the teacher of chemistry is called upon to use. The following subjects are treated at some length: Units of Measure, Specific Gravity, Measure of Length, Expansion of Solids, Liquids, and Gases, Charles' Law, Boyle's Law, Barometer, Change of State, Boiling-point, Freezing-point, Effect of Dissolved Substance on Boiling-point, Specific Heat, Latent Heat, and Electrolytic Dissociation. The chapters give a clear exposition of the principles and contain laboratory directions for experiments which serve to illustrate the principles discussed.