In the descriptive portion, extending over 215 pages, the classification of minerals according to elements is followed. The mineral descriptions are generally adequate, although native copper is disposed of in about one half page and with but four lines devoted to the Lake Superior occurrence. The statistics relating to the production of minerals are for 1910.

This edition of von Kobell's mineralogy of only 405 pages is much more comprehensive than any other text on the subject of similar compass. The authors are to be congratulated upon the clear and concise manner in which this wealth of material has been presented.

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Outlines of Theoretical Chemistry. By FREDERICK H. GETMAN, Ph.D. John Wiley & Sons. 1913. Pp. ix + 467.

This book is written primarily for the use of students beginning the study of physical chemistry. It is always interesting to have the viewpoint of a new author in such an extended field as modern physical chemistry. The array of facts and theories in the recent literature of physical chemistry is so vast that necessarily each teacher must be content to select what he considers to be the most important principles and of need neglect others. Dr. Getman has chosen to chapter and classify nineteen lines of discussion. After discussing briefly the atomic theory and the periodic law, the conventional fields of physical chemistry are devoloped historically in most cases. This historical treatment is carefully handled for the most part, the tendency being throughout the book to treat the subjects considered from the viewpoint of the original investigators. While this treatment is excellent in most cases, a little more personality injected would clear certain points. For example, the chapter on Electrons can not give the student anything more than a very vague idea of the subject. On the other hand, the subjects of Thermochemistry, Equilibrium, Electromotive Force and Actinochemistry are very clearly and satisfactorily handled.

The addition of a series of well-selected problems at the end of each chapter is to be highly commended.

While the press work of the book is of the same high quality as that of Wiley & Sons' text-books, it is to be regretted that the cost to the student is as much as $3.50.

VICTOR LENHER

BOTANICAL NOTES

SMALL'S MANUALS

DR. J. K. SMALL, of the New York Botanical Garden, has been very industrious in the preparation of systematic manuals of botany as shown by his "Flora of the Southeastern United States," now in its second edition, his "Flora of Miami," "Florida Trees," both of which appeared during 1913, and now we have a "Flora of Lancaster County" (Penn.) in collaboration with the late J. E. Carter. The first-named books were noticed in these columns when they appeared, and it remains only to notice the last. While the Florida manuals dealt with a *terra incognita,* the Flora of Lancaster County deals with a region which "has been the scene of almost continuous botanical exploration and study for nearly a century and a half." In fact the work was begun by Muhlenberg in the latter part of the eighteenth century. Somewhat more than forty years ago Professor T. C. Porter published an enumeration of the indigenous and naturalized plants of the county, and this has formed "the basis of the present flora."

The book includes about 350 pages, and is an actual descriptive manual, and not a series of keys. In other words the treatment here reminds one of that in such a manual as Britton's, or Gray's, and while keys are freely used, the genera and the species are separately described. One wishes that more local floras could be modeled after this very satisfactory little book.

BOTANICAL NOTES

FROM the Central Experimental Farm at Ottawa, Canada, there comes a bulletin (No. 73) of more than ordinary scientific interest.