

exceedingly fruitful for the science. Besides his work as a lecturer and investigator, he began in 1860 and finished in 1861 the first volume of his *Lehrbuch der organischen Chemie*, a book that was epoch-making with its new ideas and new methods of presenting this complex subject. The book was received with enthusiasm among chemists, and has served as a model for subsequent works in the same field. Three volumes of this work were finally published, but the work was never completed. He was also for many years one of the editors of Liebig's *Annalen*. During his last years he suffered much from ill health, having followed too literally Liebig's advice: "If you would become a chemist, you must ruin your health. He who does not ruin his health by hard study in these days comes to naught in chemistry."

In 1890 the German Chemical Society celebrated the twenty-fifth anniversary of Kekulé's benzene theory. The meeting was largely attended by chemists from all parts of the world. Addresses were given by A. W. Hofmann, the President of the Society, Adolph von Baeyer, Kekulé's oldest pupil, and by Kekulé himself. A full account of the meeting has been published.<sup>1</sup>

G. M. RICHARDSON.

Oct. 17, 1896.

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### NEW BOOKS.

MANUAL OF DETERMINATIVE MINERALOGY WITH AN INTRODUCTION ON BLOWPIPE ANALYSIS. By George J. Brush. Revised and Enlarged by Samuel L. Penfield. 14th Edition. pp. ix + 108. John Wiley & Sons. Price, \$3.50.

This revision, with the exception of the tables, is practically a new book. The author states that "A complete revision of the tables for the determination of minerals will be made as soon as possible, and a short chapter on crystallography and the physical properties of minerals will be prepared, but until this work can be accomplished, use will be made of the tables and of the short introduction to them from the last edition of Professor Brush."

This proposed revision of von Kobell's table is greatly needed. When it is finished the book bids fair to be as nearly perfect as text-books can well be. The introductory chapter has been rewritten with evident care and by a practiced hand, and as it

<sup>1</sup> *Ber. d. chem. Ges.*, 23, 1265.

now stands this edition is a great improvement over preceding ones.

“ In preparing the introductory chapters, great pains have been taken in the selection of the tests for the elements. Many of them are performed by means of the blowpipe, but chemical tests in the wet way are recommended when it is believed that they are more decisive.” To this evidence of good common sense it may be added that in several places the author shows a desire and ability to make his knowledge of practical value. This is shown, for example, under gold, where careful directions are given for the detection of gold in poor gold ores and the like, first by the use of mercury and then without mercury. E. H.

THE ELEMENTS OF CHEMISTRY. By PAUL C. FREER, PH.D. x+284 pp. Boston: ALLYN & BACON. 1895. Introductory price, \$1.00.

One feature in particular makes this book especially worth noticing, and that is its outright recognition of the great importance of quantitative work in an elementary course in chemistry. The recognition has been a long time on the way, and its absence has been a great detriment to the chemical instruction in secondary schools.

It is also pleasant to find Professor Freer recognizing that certain so-called physical matters are best reviewed at the outset of such a course. Indeed it would seem as if some such matters which are taken up in the present work, rather late in the course, would better be considered earlier (the laws of Mariotte and Charles for instance).

The book cannot be used to advantage by an inadequately trained teacher, but will certainly be found valuable to the student teacher on account of its excellent collection of experiments which are carefully planned and digested.

JOSEPH TORREY, JR.

TABLES AND DIRECTIONS FOR QUALITATIVE CHEMICAL ANALYSIS. By M. M. PATTISON MUIR.

This little work is evidently intended to increase the possibilities of lecture table instruction in qualitative analysis. It consists of such brief statements of processes and methods as will enable the student to attend to what is going on on the lecture table without running the risk of losing material which ought to get into his note book. The analytical methods described are, for the most part, such as have stood the test of time and experience.

JOSEPH TORREY, JR.

THE LIQUEFACTION OF GASES. Papers by MICHAEL FARADAY, F.R.S. (1823-1845). Alembic Club Reprints No. 12. 79 pp. Edinburgh: WM. E. CLAY. Price, two shillings.

In this little book of seventy-nine pages there is much matter