

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

that will be of practical service to every one who teaches elementary chemistry. Its value to investigators and advanced students is sufficiently obvious. Students ought to be introduced to the classics of chemistry at a comparatively early stage of their development. They are not as a rule, at present, because the original papers are seldom accessible to the teacher. The publication of Ostwald's "Klassiker" was the first step in the right direction, but the fact that they are in German makes them inaccessible to many who most need them.

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POLARIZATION BY DOUBLE DILUTION.

UNITED STATES DEPARTMENT OF AGRICULTURE,
DIVISION OF CHEMISTRY,

WASHINGTON, D. C., Nov. 27, 1896.

Editor Journal of the American Chemical Society, Easton, Pa. :

DEAR SIR : By accident a portion of the rule for calculating polarizations by double dilution in our paper published in this Journal, 1896, Vol. 18, pages 428 to 433, was omitted.

Page 430, beginning at the end of line 9, the rule for the approximate calculation of results obtained by Scheibler's method of double dilution should have this addition after the words "small flask," "multiply the difference by two and subtract the product from the reading in the small flask." This is equivalent to multiplying the reading obtained from the solution in the large flask by four and subtracting the reading obtained from the solution in the small flask from the product. The result is the corrected reading and, when a solution of double the normal strength is polarized in a tube of double the normal length, must be divided by four to obtain the percentage. In this case a simpler and equivalent rule for calculation is the following: Subtract one-fourth the reading of the solution in the small flask from the reading in the large flask and the result will be the corrected percentage.

Page 430, end of line 17, the word sucrose should be lactose.

Page 432, the figures in the table in the column headed "Vol-