

plete, but the results proved conclusively that the water-soluble portion, which crystallized in octahedra, was nearly pure potash alum.

HARRY F. KELLER.

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*Rapid Determination of Molybdenum in Steel.*—It has been found to be an improvement on the method previously described,<sup>1</sup> to use only 0.8 gram of drillings, and to make the precipitation in 200 cc. of the solution instead of 300 cc., taking only 100 cc. of the filtrate for reduction and titration. In this way an evaporation requiring more time than all the rest of the analysis put together is dispensed with. Reduction and titration should take place in small, and not in large volume of solution, on account of reduction not always being complete in the latter case, as is proved by the fact that Brakes<sup>2</sup> finds it necessary to use the old Emmerton factor. But if the separation be made in 200 cc. of solution, ammonia may not be used because the separation is an incomplete one with this reagent when made in a small volume of solution. The caustic soda solution is most easily made by dissolving 1 pound in 2000 to 2100 cc. water. 100 cc. of this solution is used in a determination.

Another improvement in the method (Brakes) is to expel the nitric acid used for the solution of the steel by adding 3 cc. of concentrated sulphuric acid and evaporating to fuming. The complete expulsion of the nitric acid is very important, and care must be taken that none remains on the cover, since nitrous acid or other reducing compounds are formed when a solution containing nitric acid is passed through the reductor. The results obtained by Brakes<sup>3</sup> indicate that chromium does not interfere with the determination when a sulphuric acid solution is used.

GEORGE AUCHY.

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## NEW BOOKS.

ELEMENTARY CHEMISTRY. BY L. M. DENNIS AND F. W. CLARKE. New York: The American Book Company. 1902. 340 pp. LABORATORY MANUAL to accompany the above. 254 pp. Interleaved.

The matter treated in this book is essentially the same as that to be found in most other works of its class. The mode of treatment is not especially novel. It is in fact less so than in several

<sup>1</sup> This Journal, 24, 273.

<sup>2</sup> J. Soc. Chem. Ind., 21, 832.

<sup>3</sup> Loc. cit