

200 cc. Filter on a Büchner funnel, using a linen filter; wash with boiling water till the washings are no longer acid; wash the substance back into the same flask with 200 cc. of a boiling, 1.25 per cent. solution of sodium hydroxide, free, or nearly so, from sodium carbonate; boil at once and continue the boiling for thirty minutes in the same manner as directed above for the treatment with acid. Filter on a glass funnel, using Hirsch's porcelain filter plate, asbestos pad one fourth inch thick, and suction. Wash six times with boiling water, once with 10 cc. glacial acetic acid (1 part acetic acid to 20 parts of water); wash again six times with boiling water and twice with 95 per cent. alcohol. Transfer asbestos pad and substance to a platinum dish; dry four hours at 110° , weigh and incinerate completely. The loss in weight is crude fiber.

To obtain concordant results it is necessary to treat the asbestos with boiling 1:2 hydrochloric acid for two or three days. Wash free from acid and digest with boiling soda solution for two or three days; wash free from soda; dry and incinerate. The asbestos may be used over and over again.

It is found convenient to rig up two seven or eight liter flasks over the filtering apparatus to hold boiling water, for washing the substances.

By following the above method, two men find no difficulty in digesting and transferring twenty-four substances in $3\frac{1}{2}$ hours. Checks of 0.2 per cent. are easily obtained, and generally the duplicates come closer than the above limit.

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CORRECTION.

The Specific Heat of Solids at Constant Volume, and the Law of Dulong and Petit.—The paper under the foregoing title, which appeared in the August number of this Journal went to press without revision of the proof by the author, and a number of typographical errors thus crept in:

On page 1165, last line, for C_v read c_v .

On page 1166, equation (4) should read,

$$c_p - c_v = \frac{T \beta^2 v}{a}$$

On page 1167, the equation should be numbered (5).

On page 1167, fifth line from bottom, for a read β .

On page 1168 the value of C_v for aluminum should be 5.6 and for zinc .7. The value of Δ_2 for cadmium should be 0.0 instead of 0.5. This

misprint made it appear that cadmium deviates widely from the modified law of Dulong and Petit while it really has exactly the normal atomic heat.

GILBERT N. LEWIS.

Dr. Lewis's paper has been of especial interest to me for the reason that I reached the conclusion some years ago that the real basis for the law of Dulong and Petit is the same as that for the law of Avogadro and this conclusion was presented in some of my classes. The point of view which led to this conclusion was as follows:

In accordance with the kinetic theory the law of Avogadro, depending as it does, on the law that all gases expand equally for equal increases of temperature, is based on the fact that molecules of different weight when in collision exchange energies as elastic bodies so that the value mv^2 is a constant, independent of the mass of the molecule. In other words, the velocity of a molecule varies inversely as the square of its mass, and the average energy of translation for a molecule is independent of its mass. This is exactly parallel with the law of Dulong and Petit, which is, that the energy required to raise the temperature of an atom one degree is constant and is independent of its mass.

W. A. NOYES.

NEW BOOKS.

ELEMENTARY PRACTICAL CHEMISTRY. PART I—GENERAL CHEMISTRY BY FRANK CLOWES, D. SC., AND J. BERNARD COLEMAN, A. R. C. SC. LONDON—J. AND A. CHURCHILL. Price \$1.00.

The writer found on reading here and there in this little volume, designed for beginners, that it gives most excellent and explicit directions for practical, elementary work in chemistry, and that the chosen experiments beautifully illustrate the principles under discussion. It is difficult to comprehend how any earnest student, using this book to acquaint himself with the fundamentals of chemistry, could fail to develop a deep interest in the science, or fail to arm himself with an abundance of necessary facts with which to proceed to more advanced work in the subject. There are, at the present time, so many admirable introductions to chemistry that it is difficult for the student to make his selection. Each book aims to set forth the views which its author considers most essential, when introducing the neophyte to the mysteries of chemistry. The present volume has its distinct ear marks in this direction, and to the writer's mind they seem to indicate a very proper course, which he hereby sympathetically endorses.

EDGAR F. SMITH.

DENATURED OR INDUSTRIAL ALCOHOL. BY RUFUS FROST HERRICK. New York, John Wiley & Sons, 1907. 516 pages. Price \$4.00

The recent passage of bills through congress making the long hoped-for sale of tax-free alcohol a possibility in the United States has created a need for a work giving practical details on many subjects connected with the manufacture, sale and application of denatured alcohol. The present compilation by Mr. Herrick seems to satisfy the requirements in