

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.

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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