followed Dr. Oliver Lodge who said that "The real rule on Engineers' principles would be to put 'g' somewhere into the expression for any quantity with which gravity has nothing to do, and to leave 'g' out whenever gravity is primarily concerned." By conscientiously adhering to this rule one may come out fairly well in the end, but in the present instance the confusion is more likely to be due to an oversight. On the whole the book will be a welcome addition to the library of any physicist who desires to avoid the necessity for much laborious research among original sources.

SCIENTIFIC JOURNALS.

AMERICAN CHEMICAL JOURNAL, DECEMBER.

THE principal article in this number of the Journal is one by C. F. Mabery on the composition of the Ohio and Canadian sulphur petroleums. In this article, which is only a partial report of the work, he reviews and discusses the work of other chemists in this field, and describes methods and forms of apparatus used in his investigations. As decomposition takes place in the distillation of crude petroleum during refining process, he could not use these products, but started with the crude oil and subjected it to fractional distillation *in vacuo*, in apparatus specially devised for this purpose. He found in the distillation of Ohio petroleum that no color or odor could be detected in the distillates below 235°; but above this point decomposition took place with evolution of hydrogen sulphide. The amount of ash left was small, and consisted chiefly of lime and magnesia, showing that the oil had dissolved some of the constituents of the rocks forming the cavities in which it was confined. A number of the lower-boiling hydrocarbons belonging to the methane series were isolated, and it was found that they were present in smaller quantities in the Ohio petroleum than in that from Pennsylvania.

Stillman and Yoder find that the compound formed by the action of anhydrous ammonia on aluminium chloride is $AlCl_3.6NH_3$. In their experiments dry air and ammonia were passed over aluminium chloride, and a partial decomposition of the product formed was always observed. The ammonia was partly oxidized, and water, aluminium oxide, and ammonium chloride formed.

Schlundt and Warder in an article, entitled, 'The Chemical Kinetics of Oxidation,' contribute some results on the speed of reactions under different circumstances. They find that the rate of liberation of iodine in a mixture of potassium chlorate, potassium iodide and hydrochloric acid is influenced by temperature, concentration and amount of excess of inorganic acid present.

L. W. McCay publishes a preliminary notice on the existence of the sulphoxyantimoniates. He finds that the salt prepared by Rammelsberg, and supposed by him to be a double salt, is potassium orthodisulphoxyantimoniate.

Freer gives the results of some experiments with tetrinic acid which are not in accord with the views of Nef and others on this subject. He finds that by the action of bromine on methylacetoacetic ester or its sodium salt, a uniform product is not obtained, but a mixture of four compounds. Two of these products are α- and γ- brommethylacetoacetic ester. From the latter tetrinic acid is easily formed; but, from the former, only in the presence of hydrobromic acid. There is a review in this number of 'The Principles and Practice of Agricultural Analysis' by H. W. Wiley, and obituary notices of Louis Pasteur and Felix Hoppe-Seyler.

J. ELLIOTT GILPIN.

NEW BOOKS.

Die Hausthiere. EDWARD HAHN. Leipzig, Duncker & Humblot. 1896. Pp. x+581.

Lecture Notes on Theoretical Chemistry. FERDINAND G. WEICHMANN. 2d edition. New York, John Wiley & Sons; London, Chapman & Hall, Lt'd. 1895. Pp. viii+288.

Manual of Lithology. EDWARD H. WILLIAMS. 2d edition. New York, John Wiley & Sons; London, Chapman & Hall, L't'd. 1895. Pp. 418.

Report of the Columbian Historical Exposition. Madrid, 1892; Washington, 1895. Pp. 411.

Lessons in Elementary Botany. THOMAS H. MACBRIDE. Allyn & Bacon, 1896. Pp. xi + 233. Introductory price, 60 cts.