

gards his observation as proving that the two formations are distinct. The arkose which forms a continuous belt separating the flinty slate and the unaltered green shales is believed to be a regular member of the Carboniferous series. F. A. Gooch discusses the use of hydriodic acid in the estimation of molybdenum. This subject was treated in 1806, by Goosh and Fairbanks, but their methods were criticised by Friedheim. The present article shows that certain errors of calculation in an earlier paper by Friedheim and Euler vitiate the conclusions reached in the criticism referred to. I. C. Russell gives an abstract of the results of recent observations in southeastern Washington, especially as regards the immense lava fields of the region and the gorge formed through them by the Snake river; this is said to rival the Grand Canyon of the Colorado in grandeur, though lacking its brilliant coloring.

SOCIETIES AND ACADEMIES.

PHILOSOPHICAL SOCIETY OF WASHINGTON.

THE Philosophical Society of Washington held its 464th meeting on the 20th inst, at which E. D. Preston, of the United States Coast and Geodetic Survey, read a paper on 'The Transcontinental Arc from Cape May to San Francisco,' which was followed by a paper by Wm. Eimbeck, of the same Survey, on 'The New Primary Base Apparatus,' used by the Survey, illustrated by one of the bars mounted. Mr. J. Howard Gore read a paper on 'A Dutch Practical Charity,' and Charles B. Dodge read a paper on 'Systematic Classification of Textile and other useful Fibers of the World,' illustrated by samples.

BERNARD R. GREEN,
Secretary.

SCIENCE CLUB OF THE UNIVERSITY OF WISCONSIN, JANUARY 18, 1897.

THE subject, 'Modern Methods of Milk Preservation,' was presented by Professor H. L. Russell. He divided the different methods proposed into three classes: 1. Those excluding bacteria from the milk; 2, those inhibiting the development of bacteria as in condensed or preserved milk, or where milk is kept at

temperatures too low for bacterial growth; and 3, those in which bacteria are actually destroyed, as in the various methods where heat is employed, as in pasteurization and sterilization. He also discussed the new method, devised by Dr. Babcock and himself, of restoring the consistency to pasteurized milk products. Mr. Louis Kahlenberg, in his paper, 'The Toxic Action of Dissolved Salts and their Electrolytic Dissociation,' gave, as an introduction, a brief explanation of the theory of electrolytic dissociation and the reasons for holding the same. The general proposition was made that the physiological action of a solution of an electrolyte depends on the action of the undissociated molecules, together with that of the ions present. The results of many experiments upon plants performed by the author and Mr. R. H. True and Mr. F. D. Heald were cited to substantiate this view. It was further pointed out that experiments on bacteria performed at the University, and recent investigations carried on at the University of Leipzig, further confirm the general proposition which was first published in the *Botanical Gazette* of August, 1896, by Kahlenberg and True. The significance of the discovery to physiological chemistry, agriculture, bacteriology and therapeutics was briefly mentioned.

WM. S. MARSHALL,
Secretary.

NEW BOOKS.

A Treatise on Analytical Statics. EDWARD JOHN ROUTH. Cambridge University Press. New York, The Macmillan Company. 1896, 1892. Vol. I. Pp. xii+301. Vol. II. Pp. xii+224.

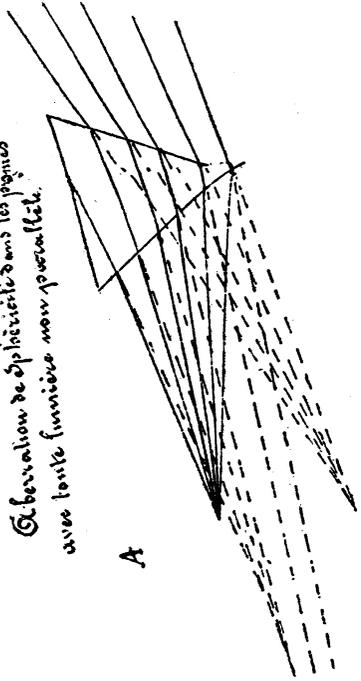
Elementary Text-book of Physics. WM. A. ANTHONY and CYRUS F. BRACKETT. Revised by W. F. MAGIE. 8th edition. New York, John Wiley & Sons. London, Chapman & Hall, Ltd. 1897. Pp. viii+512. \$4.00.

Researches upon the Antiquity of Man. HENRY C. MERCER. Boston, Ginn & Co. 1897. Pp. 178.

Die Chemie in täglichen Leben. DR. LASSAR-COHN. Hamburg and Leipzig, Leopold Voss, 1807. 2d edition. Pp. vii+303. 4 M.

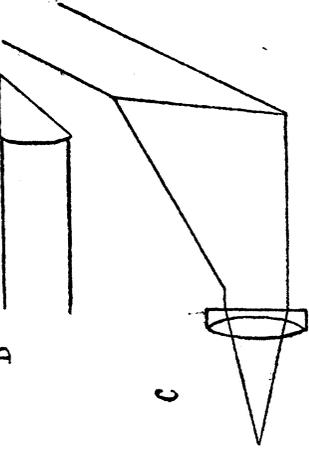
Observation de sphéricité dans les rayons avec toute lumière non parallèle.

A



masse du lentille même

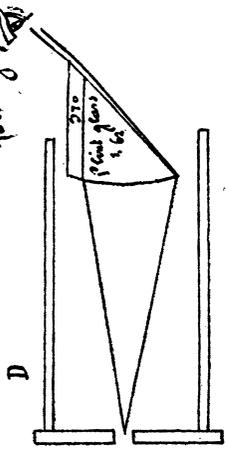
B



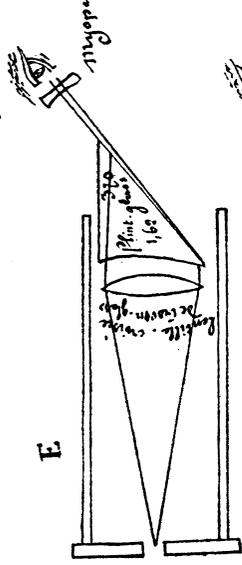
C

Comme au minimum de déviation, pour un même la même dispersion que B, mais égale à une masse sept fois plus grande.

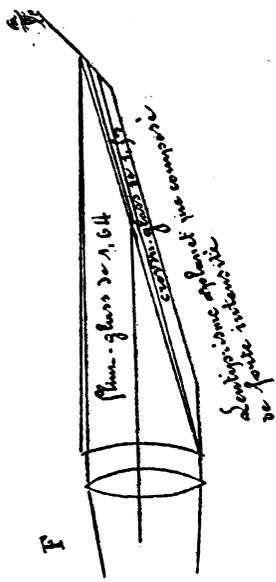
parobylisme



E



F



Le minimum de déviation pour un même la même dispersion que B, mais égale à une masse sept fois plus grande.

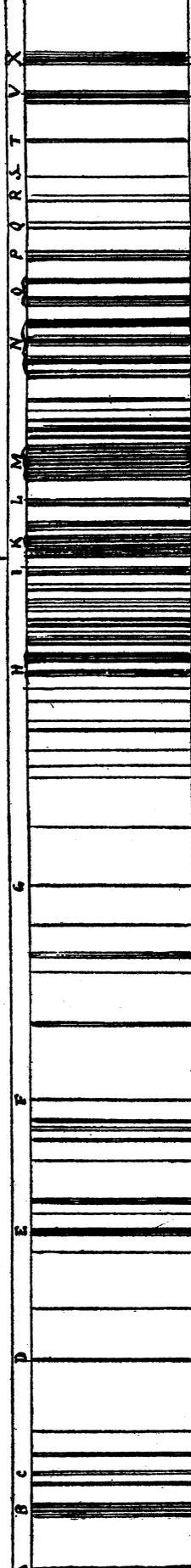
4

Nouvelle

Nouvelle invention de Spectre Solaire Optique d'après l'Anteur.

Les raies les plus déviées entre H en O ou sans par des raies fortes et faibles.

A B C D E F G H I K L M N O P Q R S T U V X



Rouge Orange Jaune Vert Bleu Indigo Violet

Rayons desquels Monsieur Emory a obtenu des spectrographiques.

Dans cette espace les raies du la plaque journalière correspondent exactement avec le Spectre optique.

Rayons qui distinguent la phosphorescence des sulfures de calcium en de barium.

Rayons qui distinguent la phosphorescence dans les minéraux sulfures d'après M. C. Herschel.

Dans cette espace les raies du la plaque journalière correspondent exactement avec le Spectre optique.