SCIENCE

A WEEKLY JOURNAL DEVOTED TO THE ADVANCEMENT OF SCIENCE, PUBLISHING THE OFFICIAL NOTICES AND PROCEEDINGS OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

FRIDAY, APRIL 29, 1904.

CONTENTS:

MSS. intended for publication and books, etc., intended for review should be sent to the Editor of SCIENCE, Garrison-on-Hudson, N. Y.

*THE NORTHEAST COAST OF BRAZIL IN ANCIENT CARTOGRAPHY.**

THE publication of the great atlas containing reproductions of almost all the known old maps of Brazil that accompanies the exposition of the Brazilian representative, Baron Rio Branco, to the arbitrator in the question of the limits of Guyana, makes possible, for the first time in Brazil, the study of the ancient cartography of that country. Having applied myself to this study in a recent paper entitled 'Os Mappas mais antigos do Brasil' published in Vol. VII. of the *Revista do Instituto Historico de São Paulo,* I verified the possibility of amplifying and correcting the scanty written documents relative to the first epoch of Brazilian history, and being invited by Baron Studart to contribute to the commemoration of the first settlement of the state of Ceará, it seemed to me that I could best respond to his intentions by making a similar study of the portion of the coast to which that state belongs. Both geographically and historically this portion is limited on the south by Cape Santo Agostinho and on the north by the mouth of the Amazonas, and to this section the present study will be exclusively devoted.

In the above-mentioned paper I treated summarily of this section in the analysis of the map of Juan de la Cosa of 1500 in which it was for the first time represented on the basis of the data furnished by the explorations of Vicente Yanez Pinzon and

* Translated from the memorial volume of the tricentennial of the state of Ceará, Brazil.

corrected is astigmatism uncorrected; and it continues to excite reflexes—cerebral, muscular, cardiac, respiratory, digestional or what-not.

We should not like to be misunderstood as teaching that eye-strain is *fons et origo mali* to all the ills that flesh inherits; or even in every case of nerve exhaustion, headache or dyspepsia in students and writers. Neurasthenia, gout, indigestion, can develop in those whose eyes are emmetropic, or, if ametropic, have been skilfully corrected. Too much confinement, too little exercise, injudicious diet and other errors of temperament, work and habit may cause many and varied symptoms, in the entire absence of eye-strain. Nevertheless, it is to be admitted that even in cases of other fundamental origin an uncorrected or imperfectly corrected refractive error will aggravate or even precipitate the symptoms.

We are not willing to go so far as Dr. Gould in ascribing, for example, the final break-down of Nietzsche to eye-strain alone. Of two 'extreme' and untenable hypotheses concerning that brilliant unfortunate we prefer Gould's to Moebius's, but we accept neither. We have no third to offer, for the facts before us are not sufficient to warrant dogmatism. Certain it is, however, that much of Nietzsche's misery was due to eye-strain. True, his eyes were examined and treated, but in all probability there remained undiscovered or uncorrected some worrisome refractive error—for the Germans have yet much to learn of the art that owes so much to the science of great Germans. An odd or complicated astigmatism, possibly of low amount, may have eluded detection or there may have been failure to adjust properly glasses correctly prescribed, or the personal equation of the patient may not have been met skilfully—there are numerous possibilities; and one guess is as good or bad as another.

To sum up: Dr. Gould has conceived with the brain of a master thinker and inscribed with the pen of a ready writer two volumes of 'extreme' readability, interest and importance; on the whole wise in tone, always forceful, usually graceful, often elevated in diction; unfortunately marred now and again by useless acridity or unnecessary denunciation. He has shown that much, if not all, of the constant or recurring distress of a number of the leading spirits of the nineteenth century—distress otherwise mysterious and unaccountable—was in all probability due to refractive defects of the eyes and the consequent accommodational strain made necessary during work. It might, therefore, have been relieved in large part, if not entirely, by suitable glasses; and this is the great, but therefore simple, lesson for physician and for patient. In emphasizing this lesson the author has emphasized old and unappreciated truth; he has also added to the sum of truth. It is a work well worth the doing; a work certainly not inferior to the invention of a new staining fluid, the synthesis of a new hypnotic drug or the description of a new symptom-complex; a work, of which the true value will become more apparent as the years increase.

SOLOMON SOLIS COHEN.

SCIENTIFIC JOURNALS AND ARTICLES.

THE April number of the *Botanical Gazette* contains the following articles: Mary Ellen Bennett, under the title 'Are Roots Aerotropic'? has shown that the claim of Molisch can not be sustained by her numerous experiments. She also offers a solution for the curvatures of roots recorded by him and termed aerotropic. Aven Nelson in his fifth 'Contributions from the Rocky Mountain Herbarium' describes a large number of new species, chiefly from southern Utah and southern Nevada. Florence Lyon discusses 'The Evolution of the Sex Organs of Plants,' upon the basis of numerous very interesting cases of exceptional development of antheridia and archegonia that she has found, chiefly among Pteridophytes. Charles Robertson makes a suggestive contribution to the phylogeny of Angiosperms from the standpoint of his study of the problems of pollination. His contention is that the primitive Angiosperms were entomophilous, and that the anemophilous ones are metamorphosed entomophilous flowers, whose seemingly simple structures are degraded, not primitive. F. V. Coville dis-

cusses and figures 'Arcterica, the Rarest Genus of Heathers,' living on Bering Island. W. F. Ganong has begun a series of descriptions of 'New Precision-appliances for Use in Plant Physiology,' this first paper dealing with a clinostat and a portable clamp stand.

SOCIETIES AND ACADEMIES.

THE NATIONAL ACADEMY OF SCIENCES.

THE following papers were presented at the spring session held at Washington on April 19, 20 and 21.

E. L. NICHOLS and ERNEST MERRITT: 'On Fluorescence Spectra.'

JOHN TROWBRIDGE: 'Spectra of Gas at High Temperatures.'

THEODORE LYMAN, presented by JOHN TROWBRIDGE: 'Short Wave-Lengths of Light.'

H. W. MORSE, presented by JOHN TROWBRIDGE: 'Spectra produced by the Wehnelt Interrupter.'

GEORGE F. BARKER: 'Note on Radioactivity and Autoluminescence.'

R. S. WOODWARD: 'A Double Suspension Apparatus for determining the Acceleration of Gravity.'

R. S. WOODWARD: 'The Compressibility of the Earth's Mass required by the Laplacian Law of Density Distribution.'

HENRY L. ABBOT: 'The Disposition of Rainfall in the Basin of the Chagres.'

A. F. ZAHM, introduced by A. GRAHAM BELL: 'Surface Friction of the Air at Speeds below 40 Feet a Second.'

R. H. CHITTENDEN: 'Physiological Economy in Nutrition, with Special Reference to the Minimal Proteid Requirement of the Healthy Man.' A preliminary Report.

HENRY F. OSBORN: 'Recent Paleontological Discoveries by the American Museum Exploring Parties.'

HENRY F. OSBORN: 'Reclassification of the Reptilia.'

W. D. MATTHEW, submitted by HENRY F. OSBORN: 'Position of the Limbs in the Sauropoda.'

HORATIO C. WOOD, JR., presented by HORATIO C. WOOD: 'A Preliminary Report upon *Apocynum cannabinum*.'

ARTHUR T. HADLEY, presented by the HOME SECRETARY: 'Biographical Memoir of James Hadley.'

CHARLES L. JACKSON: 'Biographical Memoir of Henry Barker Hill.'

ALEXANDER GRAHAM BELL: 'The Multi-nippled Sheep of Beinn Bhreagh.'

SIMON NEWCOMB: 'Application of New Statistical Methods to the Question of the Causes Influencing Sex.'

C. S. PEIRCE: 'Note on the Simplest Possible Branch of Mathematics.'

THE AMERICAN CHEMICAL SOCIETY.

NEW YORK SECTION.

THE seventh meeting of the season was held April 8, at the Chemists' Club, 108 West Fifty-fifth Street. The following program was presented:

The Determination of Manganese as Sulphide and the Composition of the Pink and Green Sulphides: J. C. OLSEN.

Professor Olsen discussed the advantages of separating and determining manganese as sulphide. The method is only practicable, however, when the sulphide is obtained as the green modification which is larger grained than the ordinary pink sulphide and, therefore, settles more readily and is more easily filtered and washed. This is best accomplished by pouring the manganese solution into a boiling solution of ammonium chloride and ammonium sulphide.

On analysis the pink sulphide showed variable amounts of water. This was found to be due to the fact that it is a mixture of a gray sulphide which holds more than three per cent. of water and a red sulphide. This modification was obtained pure and was found to hold the same amount of water as the green sulphide, about three fourths per cent. The difference between the pink and green sulphide is held to be one of molecular structure, rather than of chemical composition or degree of hydration.

On the Combination of a Solvent with the Ions (preliminary paper): J. LIVINGSTON R. MORGAN and C. W. KANOLT.

Preliminary experiments were reported which show that by electrolyzing a solution of silver nitrate and pyridine in water, pyridine migrates with the silver and increases in concentration at the cathode, while it decreases at the anode. With cupric nitrate and water, dissolved in alcohol, water migrates with the copper ions and increases on the cathode and decreases at the cathode.