

SCIENCE

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FRIDAY, MAY 3, 1901.

HENRY AUGUSTUS ROWLAND.

CONTENTS :

<i>Henry Augustus Rowland</i> : PROFESSOR J. H. AMES	681
<i>Immunity and Protective Inoculation</i> : PROFESSOR HENRY WINSTON HARPER.....	684
<i>An Electro-Chemical Laboratory in the University of Pennsylvania</i> : PROFESSOR EDGAR F. SMITH...	697
<i>Legislative Recognition of Scientific Work</i>	704
<i>Spring Meeting of the Council of the American Association for the Advancement of Science</i>	705
<i>Scientific Books :—</i>	
<i>Lunardonì and Leonardi's Gli Insetti Nocivi</i> : NATHAN BANKS. <i>Lassar-Cohn's Introduction to Modern Scientific Chemistry</i> : DR. WILLIAM B. SCHÖBER. <i>Seller's Qualitative Chemical Analysis</i> ; Congdon's <i>Laboratory Instructions in General Chemistry</i> : H. F. Meade's <i>Chemists' Pocket Manual</i> : J. E. G. <i>Books Received</i>	706
<i>Scientific Journals and Articles</i>	709
<i>Societies and Academies :—</i>	
<i>New York Academy of Sciences, Section of Geology and Mineralogy</i> : DR. THEODORE G. WHITE. <i>The New York Section of the American Chemical Society</i> : DR. DURAND WOODMAN. <i>Biological Society of Washington</i> : F. A. LUCAS. <i>The Las Vegas Science Club</i> : T. D. A. C.....	710
<i>Discussion and Correspondence :—</i>	
<i>Priority of Place and the Method of Types</i> : O. F. COOK. <i>The Proper Name of the Alpine Chough</i> : WILLIAM J. FOX.....	712
<i>Botanical Notes :—</i>	
<i>The Study of Mosses</i> ; <i>Botanical Facilities afforded to Students by the New York Botanical Garden</i> ; <i>A Study of Wheat</i> : PROFESSOR CHARLES BESSEY.....	714
<i>Scientific Notes and News</i>	715
<i>University and Educational News</i>	719

IN the death of Professor Rowland, at the age of fifty-three, in the fulness of his activity and powers, the world has lost one of its foremost men of genius ; America, its greatest scientist ; Johns Hopkins University, the teacher and investigator who has brought it most renown.

Henry Augustus Rowland was born at Honesdale, Pennsylvania, Nov. 27, 1848 ; he entered the Rensselaer Polytechnic Institute, Troy, and received the degree of C.E. in 1870. After a brief experience in practical engineering on a railroad he accepted the position of teacher of science in Wooster College, where he taught physics, zoology and geology for the year 1871–2. He was then called to the Rensselaer Institute as instructor, and was soon promoted to assistant professor. He remained at Troy until he accepted a position at Johns Hopkins University in 1875. The attention of President Gilman of Johns Hopkins University was directed to Rowland by Professor Michie of West Point ; and the first meeting of the two took place at the Academy on the Hudson. Before assuming the duties of his new office, at the suggestion of President Gilman, he spent a year in Europe purchasing apparatus for his laboratory, becoming acquainted with the prominent scientists of England and the Continent, and making a prolonged

MSS. intended for publication and books, etc., intended for review should be sent to the responsible editor, Professor J. McKeen Cattell, Garrison-on-Hudson, N. Y.

BOOKS RECEIVED.

Le système métrique des poids et mesures. G. BIGOURDAN. Paris, Gauthier Villars. 1901. Pp. vi + 458. 10 fr.

A Treatise on Electro-magnetic Phenomena and on the Compass and its Deviations. COMMANDER T. A. LYONS. New York, John Wiley & Sons; London, Chapman & Hall, Limited. 1901. Pp. xv + 556.

Phycomyceten and Ascomyceten. ALFRED MÖLLER. Jena, Gustav Fischer. 1901. Pp. xii + 318 and 11 plates. Mk. 24.

Elementary Questions in Electricity and Magnetism. MAGNUS MACLEAN and E. W. MARCHANT. London, New York and Bombay, Longmans, Green & Co. 1900. Pp. 59.

The Romance of the Heavens. A. W. BICKERTON. New York, The Macmillan Co.; London, Swan, Sonnenschein & Co., Limited. 1901. Pp. iii + 284. \$1.25.

Text-book of Zoology, treated from a Biological Standpoint. OTTO SCHMEIL. Translated from the German by RUDOLF ROSENBLACK. Edited by J. T. CUNNINGHAM. New York, The Macmillan Co.; London, Adams and Charles Black. 1901. Pp. xvi + 493. \$4.00.

Diseases in Plants. H. MARSHALL WARD. London and New York, The Macmillan Co. 1901. Pp. xiv + 309. \$1.60.

SCIENTIFIC JOURNALS AND ARTICLES.

THE *Botanical Gazette* for April contains further descriptions of new species of North American trees by Professor C. S. Sargent. Among them are thirteen species of *Crataegus*, which is proving to be one of the most prolific of our genera in species, a new *Betula* from Alaska, and a new *Cupressus* from California. Professor C. O. Townsend writes upon the effect of hydrocyanic acid gas upon grains and seeds. Since this gas has become extensively used for fumigating purposes, it has become important to determine its effect upon the germination of seeds and upon their use as food. Professor Townsend has demonstrated that if the grain and seeds are dry the influence of the gas upon the vitality is far less marked than if they are moist. Dry seeds treated with the gas are not injured for food, but damp seeds should not be used until several hours after removal from the gas. Mr. A. C. Life contributes an interesting study upon the tuber-like rootlets of *Cycas revo-*

luta, in which the rôle played by the fungi and by the algae upon the formation of these tubercles is worked out. Mr. Newton B. Pierce describes a new bacteriosis of the walnut which has become a well-marked disease in California. The active organism proves to be a new species of *Pseudomonas*. The usual book reviews, minor notices and notes for students complete the number.

THE second (April) number of Volume II. of the *Transactions* of the American Mathematical Society contains the following papers: 'Canonical Forms of Quaternary Abelian Substitutions in an Arbitrary Galois Field,' by L. E. Dickson; 'Certain Cases in which the Vanishing of the Wronskian is a Sufficient Condition for Linear Dependence,' by M. Bôcher; 'An Elementary Proof of a Theorem of Sturm,' by M. Bôcher; 'On the Determination of Surfaces capable of Conformal Representation upon a Plane in such a Manner that Geodetic Lines are represented by Algebraic Curves,' by H. F. Stecker; 'On the Existence of a Minimum of Integral $\int_{x_0}^{x_1} F(x, y, y') dx$ when x_0 and x_1 are Conjugate Points, and the Geodesics on an Ellipsoid of Revolution; a Revision of a Theorem of Kneser's,' by W. F. Osgood; 'On the Geometry of Planes in a Parabolic Space of Four Dimensions,' by I. Stringham.

THE March number of the *Bulletin* of the American Mathematical Society contains the following papers: 'Report of the December Meeting of the Chicago Section,' by Professor T. F. Holgate; 'Indirect Circular Transformations and Mixed Groups,' by Professor H. B. Newson; 'Pure Mathematics for Engineering Students,' by Professor A. S. Hathaway; 'Review of Adams' Unpublished Papers,' by Professor E. W. Brown; 'Notice sur M. Hermite' (translation of an address before the Paris Academy of Sciences), by M. C. Jordan; 'Notes'; 'New Publications.' The April number contains the following papers: 'Report of the February Meeting of the Society,' by Professor F. N. Cole; 'Green's Functions in Space of One Dimension,' by Professor M. Bôcher; 'On a System of Plane Curves having Factorable Parallels,' by Dr. Virgil Snyder; 'Possible

Triply Asymptotic Systems of Surfaces,' by Dr. L. P. Eisenhart; 'Note on Hamilton's Determination of Irrational Numbers,' by Dr. H. E. Hawkes; 'Review of Muth's *Elementartheiler*,' by Mr. T. J. P. A. Bromwich; 'Shorter Notices': 'Fricke's Lectures on Higher Mathematics,' and 'Böger's Plane Geometry of Position,' by Professor H. S. White; 'Notes'; 'New Publications.'

SOCIETIES AND ACADEMIES.

SECTION OF GEOLOGY AND MINERALOGY OF THE NEW YORK ACADEMY OF SCIENCES.

At the meeting of the Section on March 18th, the following program was presented:

'The Cambro-Ordovician Outlier at Wellstown, Hamilton County, New York.' In introducing the subject of the paper Professor Kemp gave a brief account of the physiographic problems presented in the Adirondacks and of the significance of the smaller outlines of Paleozoic strata which occur within the crystalline area. He then discussed the Wellstown exposure and described it in much the same way as he has already done in print in the 'Eighteenth Annual Report of the State Geologist of New York,' page 145. The general conclusion favored the existence of land areas of ancient crystalline rocks in the vicinity of Wells, and, it seemed to the speaker, that the peculiar sediments could not be explained in any other way. Pebbles, as large as one's fist, of gneiss similar to that found in the ancient hills, are imbedded in the Trenton limestone, and much sand is found in the limestones of both the Calciferous and the Trenton. It was admitted that the present valley is due to faulting, as has been previously claimed by Dr. R. Ruedemann, but the shores of the late Cambrian and early Ordovician could not have been far from the present outcrops of the Paleozoics at Wells. Mr. Van Ingen and Doctors Levison, Dodge, White and Julien took part in the discussion of the paper.

Dr. Julien remarked, in regard to the sand found in the limestones to which Professor Kemp referred, that although the smaller and angular portion of the sand, in which feldspar is common, and particles of garnet, epidote

and menaccanite also occur, may possibly be residual, derived from decay of gneiss adjacent to the shores of the ancient basin, the predominant quartz grains, well rounded and even perfectly spherical, could not possibly be of that origin. Their sculpture indicates prolonged action during ages before they assumed spherical form, and that although found in sediments loose or consolidated in all periods from the quartzites of the Laurentian down to the present beaches along rivers, lakes and ocean, they represent in all cases ancient materials which have been worked up over and over again from period to period. In the Potsdam of the North American continent they have been accumulated in an extensive outer-beach deposit, the result of an enormous resorting of materials throughout the vast Cambrian time. These 'paleospheres' were doubtless derived from the same Potsdam horizon which has yielded the oolitic quartz sand of the 'singing beach' on the shores of Lake Champlain, near Plattsburg, not many miles from the Wellstown Ordovician outcrop. They certainly were not swept into this limestone basin by currents, since the absence of sorting and the parallel deposition of their axes show that they were dropped down from the surface in a continuous gentle shower. The conditions which favored this consist of the floating of sand from the beaches along sheltered bays, such as Long Island sound, on every quietly rising tide, with its seaward transport, often to hundreds of miles off the coast, commonly caught in the dredges of surveying steamers, as noted by Verrill and others, and in its constant subsidence over the bottom. Such sand transport was plainly in progress over the quiet embayment occupied by this limestone, from surrounding beaches supplied from the decay and disintegration of an ancient shore of Potsdam and Calciferous sandstones. The various sands referred to in these remarks were illustrated by photomicrographs.

'A Method of facilitating Photography of Fossils' was described by Mr. Gilbert Van Ingen. The process consists in forming, on the surface of the specimen to be photographed, a thin coating of ammonium chloride by the combination near that surface of ammonia gas and