

and habit with rhamnose, with which the other physical constants and chemical properties also agreed. The other product of hydrolysis was a resin, the further study of which is deferred.—Chlorinating action of ferric chloride in the aromatic series, by M. V. Thomas. By the action of ferric chloride upon boiling benzene, monochlorobenzene is readily obtained. This again, submitted to the action of more ferric chloride, gives a mixture of dichlorobenzenes. The reaction can be pushed as far as the hexachloride. Toluene behaves similarly, the substitution being always in the ring and not in the side chain.—On the dialkyl phosphoric ethers, by M. J. Cavalier.—On the acid phosphoglycerates, by MM. Adrian and Trillat.—On the saccharification of starch by malt, by M. Henri Pottevin. The experiments given show that the transformation of starch into maltose is the result of two distinct operations, dextrine being always an intermediate product. The differences observed between the various dextrines are differences in physical state only.—Hepatic pigments in the Vertebrates, by MM. A. Dastre and N. Floresco.—On the ferments causing the diseases of wines, by M. J. Laborde.—On some points of external morphology of the *Aphrodite*, by M. G. Darboux.—On the nitrogenous nutrition of phanerogamous plants by the aid of amines, salts of ammonium compounds, and alkaloids, by M. L. Lutz. The amines can be assimilated directly without previous conversion into ammoniacal salts or nitrates. Amines of low molecular weight are more easily taken up by the plant.—Influence of some poisons on the antitoxic power of the blood, by MM. C. J. Salomonsen and Th. Madsen.—Remarks on a paper of M. Daniel Berthelot, entitled "On the rigorous determination of the molecular weights of gases," by M. G. Marqfoy.

DIARY OF SOCIETIES.

THURSDAY, MAY 5.

ROYAL SOCIETY, at 4.30.—Observations on the Action of Anæsthetics on Vegetable and Animal Protoplasm: Dr. Waller, F.R.S., and Prof. Farmer.—On certain Structures formed in the Drying of a Fluid with Particles in Suspension: Miss C. A. Raisin.—On Photographic Evidence of the Objective Reality of Combination Tones: R. W. Forsyth and R. J. Sower.—The Relations between the Hybrid and Parent Forms of Echinoid Larvæ: H. M. Vernon.

LINNEAN SOCIETY, at 8.—On some Spitsbergen Collembola: Sir John Lubbock, Bart., M.P., F.R.S.—On the Structure and Development of *Sorauthera*: Miss Ethel Barton.—The Species, the Sex, and the Individual: J. T. Cunningham.

CHEMICAL SOCIETY, at 8.—The Reactions of the Carbohydrates with Hydrogen Peroxide: C. F. Cross, E. J. Bevan, and Claud Smith.—The Properties and Relationships of Dihydroxytartaric Acid, Part II.: H. J. H. Fenton.—The Affinity Constants of certain Hydroxy-acids: S. Skinner.—Molecular Weights in Solution of Permanganates, Perchlorates, and Periodates: J. Murray Crofts.

INSTITUTION OF ELECTRICAL ENGINEERS (Society of Arts), at 8.—The Prevention of Interruptions to Electricity Supply: Leonard Andrews.

FRIDAY, MAY 6.

ROYAL INSTITUTION, at 9.—Living Crystals: Edward A. Minchin.
GEOLOGISTS' ASSOCIATION, at 8.—Notes on Skye: Horace B. Woodward, F.R.S.—Observations in Lapland: Aubrey Strahan.

SATURDAY, MAY 7.

GEOLOGISTS' ASSOCIATION.—Excursion to Hillmorton and Rugby. Director: Beeby Thompson.

MONDAY, MAY 9.

SOCIETY OF ARTS, at 8.—Electric Traction: Prof. Carus Wilson.
ROYAL GEOGRAPHICAL SOCIETY, at 8.30.—Journey across Tibet from West to East: Captain M. S. Welby.

TUESDAY, MAY 10.

ANTHROPOLOGICAL INSTITUTE, at 8.30.
RÖNTGEN SOCIETY, at 8.—Notes on the Description of a New Induction Coil in *Electrical Review*, February 4, 1898: A. Apps.—Some Notes on Contact Breakers: Dr. J. Macintyre.
ROYAL VICTORIA HALL, at 8.30.—A Simple Experiment and its Explanation: Prof. McLeod.

WEDNESDAY, MAY 11.

SOCIETY OF ARTS, at 8.—Water Gas and its Applications: Vivian B. Lewes.

THURSDAY, MAY 12.

ROYAL SOCIETY, at 4.30.—*Probable Papers*: The Electrical Response of Nerve to a Single Stimulus investigated with the Capillary Electrometer. Preliminary Communication: Prof. Gotch, F.R.S., and G. J. Burch.—A Study of the Phyto-Plankton of the Atlantic: G. Murray, F.R.S., and V. H. Blackman.—Effects of Prolonged Heating on the Magnetic Properties of Iron: S. R. Roget.—On the Connection of Algebraic Functions with Automorphic Functions: E. T. Whittaker.
ROYAL INSTITUTION, at 3.—Heat: Lord Rayleigh.

MATHEMATICAL SOCIETY, at 8.—On the Numerical value of $\int_0^h e^{x^2} dx$:

H. G. Dawson.—On the Reflection and Transmission of Electric Waves

NO. 1488, VOL. 58]

by a Metallic Grating: Prof. Lamb, F.R.S.—Notes on some Fundamental Properties of Manifolds: A. E. H. Love, F.R.S.
INSTITUTION OF ELECTRICAL ENGINEERS (Society of Arts), at 8.

FRIDAY, MAY 13.

ROYAL INSTITUTION, at 9.—Recent Experiments on certain of the Chemical Elements in Relation to Heat: Prof. W. A. Tilden, F.R.S.
ROYAL ASTRONOMICAL SOCIETY, at 8.
PHYSICAL SOCIETY, at 5.—Galvanometers, Part II.: Prof. W. E. Ayrton and T. Mather.
MALACOLOGICAL SOCIETY, at 8.

SATURDAY, MAY 14.

GEOLOGISTS' ASSOCIATION (King's Cross, G.N.R.), at 1.20.—Excursion to Ayot and Hatfield. Directors: J. Hopkinson and A. E. Salter.

BOOKS AND SERIALS RECEIVED.

BOOKS.—A Student of Nature: R. M. Fergusson (A. Gardner).—Royal University of Ireland Calendar, 1898 (Dublin, Thom).—A Course in Mechanical Drawing: J. S. Reid (Chapman).—Quantitative Chemical Analysis by Electrolysis: Drs. A. Classen and W. Löb, translated by W. H. Herrick and B. B. Boltwood (Chapman).—Technical Mycology: Dr. F. Lafar, translated by C. T. C. Salter, Vol. 1 (Griffin).—Electro-Physiology: Prof. W. Biedermann, translated by F. A. Welby, Vol. 2 (Macmillan).—Text-Book of Physical Chemistry: Prof. C. L. Speyers (Spon).—Methods for the Analysis of Ores, Pig Iron and Steel (Easton, Pa., Chemical Publishing Company).—First Stage Magnetism and Electricity: Dr. R. H. Jude (Clive).—A Northern Highway of the Tsar: A. Trevor-Battye (Constable).—Elementary General Science: A. T. Simmons and L. M. Jones (Macmillan).—Journal of the Iron and Steel Institute, Name-Index, Vols. 1 to L: edited by E. H. Brough (Spon).
SERIALS.—National Geographic Magazine, April (Washington).—American Journal of Psychology, Vol. ix, No. 3 (Worcester, Mass.).—Good Words, May (Isbister).—Sunday Magazine, May (Isbister).—Natural Science, May (Dent).—Botanische Jahrbücher, Vierundzwanzigster Band, v. Heft (Leipzig, Engelmann).—Century Magazine, May (Macmillan).—American Naturalist, March (Boston, Ginn).—Humanitarian, May (Hutchinson).—Proceedings of the University of Durham Philosophical Society, Part 1 (Newcastle-on-Tyne).—Journal of the Royal Microscopical Society, April (Williams).—Journal of Botany, May (West).—Bulletin of the American Mathematical Society, April (N.Y., Macmillan).—Contemporary Review, May (Isbister).—Scribner's Magazine, May (Low).—National Review, May (Arnold).—Brain, Part 80, May (Macmillan).—Fortnightly Review, May (Chapman).—Among British Birds in their Nesting Haunts: O. A. J. Lee, Part xi. (Edinburgh, Douglas).—Knowledge, May (High Holborn).—Zeitschrift für Physikalische Chemie, xxv. Band, 4 Heft (Leipzig, Engelmann).

CONTENTS.

	PAGE
Scientific Worthies, XXXI.—Albert von Kölliker. (With Photogravure Plate Engraving.) By Prof. W. F. R. Weldon, F.R.S.	1
Nitro-Explosives. By A. D.	4
Psychical Research. By Dr. W. Leslie Mackenzie	5
British East Africa	6
Our Book Shelf:—	
Lupton: "Notes on Observations"	7
Cox: "Prospecting for Minerals"	7
Dunbar: "The Process of Creation Discovered"	8
Murché: "Domestic Science Readers"	8
Reid: "A Course in Mechanical Drawing"	8
Deas: "Flower Favourites, their Legends, Symbolism, and Significance"	8
Letter to the Editor:—	
Röntgen Rays and Ordinary Light.—Prof. J. J. Thomson, F.R.S.	8
Sleep, and the Theory of its Cause. By L. H.	8
A Proposed Revolution in Nautical Astronomy. By H. B. G.	10
A New Physical Research Laboratory at the Sorbonne. (Illustrated.)	12
Photography at the Crystal Palace	14
Micro-biology as applied to Hygiene	15
Notes	16
Our Astronomical Column:—	
Comet Perrine (March 19)	19
Tempel's Comet (1867 II.)	19
Kirchhoff's Spectroscope	19
Jupiter's Red Spot	20
Petroliferous Sands and Mud Volcanoes in Burma. (Illustrated.) By H. B. W.	20
Experiments on the Working of Gas-Engines	21
University and Educational Intelligence	22
Scientific Serials	22
Societies and Academies	22
Diary of Societies	24
Books and Serials Received	24