

lime, which would correspond to variations in the heats of solution. This, however, was not borne out by the experiments, samples of lime prepared at 1000°, 1200°, 2000°, and the temperature of the electric furnace all giving the same results in the calorimeter—Actino-photometer based upon the luminosity of phosphorescent zinc sulphide and the intensity or nature of the exciting sources of light, by M. Charles Henry.—On dextrine considered as a reserve material, by M. Leclerc du Sablon.—On some new anatomical peculiarities in the fatty grains (cotyledons and endosperm), by M. Edouard Heckel.—On an extraordinary halo observed at Paris, April 5, 1899, by M. Joseph Jaubert.

## DIARY OF SOCIETIES.

### THURSDAY, APRIL 20.

ROYAL SOCIETY, at 4.30.—The Physiological Action of Choline and Neurine: Dr. Mott, F.R.S., and Dr. Halliburton, F.R.S.—Intestinal Absorption, especially on the Absorption of Serum, Peptone, and Glucose: Prof. R. Waymouth Reid, F.R.S.—Studies on the Morphology of Spore-producing Members. No. 4. The Leptosporangiate: Prof. F. O. Bower, F.R.S.—Note on the Fertility of Different Breeds of Sheep, with Remarks on the Prevalence of Abortion and Barrenness therein: W. Heape.—Some further Remarks on Red-water or Texas Fever: A. Eddington.

ROYAL INSTITUTION, at 3.—The Atmosphere: Prof. J. Dewar, F.R.S.  
LINNEAN SOCIETY, at 8.—The Botany of the Ceylon Patanas: H. W. H. Pearson.—Imitation as a Source of Anomalies: Prof. R. J. Anderson.—List of British and Irish Spiders.—Rev. O. Pickard Cambridge, F.R.S.  
CHEMICAL SOCIETY, at 8.—Some Dipyrindyl Derivatives from Citrazinic Acid: W. J. Sell and H. Jackson.—On the Interaction of Mercurous and Mercuric Nitrites, with the Nitrites of Silver and Sodium: P. C. Ray.—The Synthesis and Preparation of Terebic and Terpenylic Acids: W. Trevor Lawrence.—The Allotropic Modifications of Phosphorus: D. L. Chapman.—β-Isopropyl Glutaric Acid: F. H. Howles and J. F. Thorpe.—Ethyl Ammonium sulphite: Edward Divers and Masataka Ogawa.—Ethyl Ammonium Selenite and Non-existence of Amidoselenites (Selenosamates): Edward Divers and Seihaichi Hada.

INSTITUTION OF CIVIL ENGINEERS, at 8.—"James Forrest" Lecture: Magnetism: Prof. J. A. Ewing, F.R.S.

### FRIDAY, APRIL 21.

ROYAL INSTITUTION, at 9.—Structure of the Brain in Relation to its Functions: Frederick Walker Mott, F.R.S.  
PHYSICAL SOCIETY, at 5.—On the Effect of a Solid Conducting Sphere in a Variable Magnetic Field on the Magnetic Induction at a Point Outside: C. S. Whitehead.—Demonstration of Richards's Method of Standardising Thermometers: Dr. R. A. Lehfeldt.  
EPIDEMIOLOGICAL SOCIETY, at 8.30.—The Relations of Bacteriology to Epidemiology: Dr. F. R. Blaxall.

### SATURDAY, APRIL 22.

GEOLOGISTS' ASSOCIATION.—Excursion to Staines. Director: W. Whitaker, F.R.S. Leave Waterloo at 1.57 p.m.; arrive Staines Junction 2.35 p.m.

### MONDAY, APRIL 24.

SOCIETY OF ARTS, at 8.—Leather Manufacture: Prof. Henry R. Procter.  
ROYAL GEOGRAPHICAL SOCIETY, at 8.30.—Journeys on the Nyasa-Tanganyika Plateau: Captain F. R. F. Boileau, R.E., and L. A. Wallace.  
SOCIETY OF CHEMICAL INDUSTRY, at 8.30.—The Relations of the Society to Chemical Engineering and to Industrial Research: George Beilby.  
INSTITUTE OF ACTUARIES, at 5.30.—On the Requirements of the Life Assurance Companies Act, 1870, in regard to Valuation Returns, with some Notes on the Classification and Valuation of Special Policies: Ralph Todhunter.

### TUESDAY, APRIL 25.

ROYAL INSTITUTION, at 3.—Zebras and Zebra Hybrids: Prof. J. Cossar Ewart, F.R.S.  
ANTHROPOLOGICAL INSTITUTE, at 8.30.—Ju Ju Laws and Customs of the Niger Delta: Le Comte C. de Cardi. Illustrated by Lantern Slides and a variety of objects from West Africa.—Exhibition of Lantern Slides of Views in the Colony of Sierra Leone and the Protectorate, with Short Descriptive Account: T. J. Alldridge.  
INSTITUTION OF CIVIL ENGINEERS, at 8.—Annual General Meeting of Corporate Members.  
ROYAL PHOTOGRAPHIC SOCIETY, at 8.—A Demonstration of the Making of Glass Diaphragms: Thomas Bolas.

### WEDNESDAY, APRIL 26.

SOCIETY OF ARTS, at 8.—Coal Supplies: T. Forster Brown.  
GEOLOGICAL SOCIETY, at 8.—On Limestone-Knolls in the Craven District of Yorkshire and elsewhere: J. E. Marr, F.R.S.—The Limestone-Knolls below Thorpe Fell, between Skipton and Grassington in Craven: J. R. Dakyns.—On Three Species of Lamellibranchs from the Carboniferous Rocks of Great Britain: Dr. Wheelton Hind.

### THURSDAY, APRIL 27.

ROYAL SOCIETY, at 4.30.  
ROYAL INSTITUTION, at 3.—The Atmosphere: Prof. J. Dewar, F.R.S.  
INSTITUTION OF ELECTRICAL ENGINEERS, at 8.—Experiments on Alternate Current Arcs by Aid of Oscillographs: W. Duddell and E. W. Marchant. (Conclusion of Discussion.)—Capacity Measurements of Long Submarine Cables: J. Elton Young.

NO. 1538, VOL. 59]

INSTITUTION OF MECHANICAL ENGINEERS, at 7.30.—Address by the President, Sir William H. White, K.C.B., F.R.S.

### FRIDAY, APRIL 28.

ROYAL INSTITUTION, at 9.—Some Features of the Electric Induction Motor: Prof. C. A. Carus Wilson.

INSTITUTION OF MECHANICAL ENGINEERS, at 7.30.—Evaporative Condensers: Harry G. V. Oldham.

## BOOKS AND SERIALS RECEIVED.

BOOKS.—Elementary Physics and Chemistry, First Stage: R. A. Gregory and R. T. Simmons (Macmillan).—Th. Ipané: C. Graham (Unwin).—La Bicyclette, sa Construction et sa Forme: Dr. C. Bourlet (Paris, Gauthier-Villars).—Die Vegetation der Erde, iii.: Dr. G. Radde (Leipzig, Engelmann).—The Hunterian Oration delivered on February 14, 1899: Sir W. MacCormac (Smith, Elder).—Inwood's Tables of Interest and Mortality for the Purchasing of Estates, &c., 25th edition, revised, &c., by W. Schooling (Lockwood).—Lehrbuch der Algebra: Prof. H. Weber, Zweite Auflage, Zweiter Band (Braunschweig, Vieweg).—Geschichte der Physikalischen Experimentierkunst: Profs. Gerland and Traummüller (Leipzig, Engelmann).—The Natural Waters of Harrogate: Dr. F. W. Smith (Dawbarn).

SERIALS.—Zeitschrift für Physikalische Chemie, xxviii. Band, 3 Heft (Leipzig).—National Geographic Magazine, April (Washington).—The Atoll of Funafuti, Part 7 (Sydney).—Monthly Weather Review, December, 1898, and Annual Summary for 1898 (Washington).—Knowledge, April (High Holborn).—The Photo-Miniature, April (Dawbarn).—Transactions of the Astronomical and Physical Society of Toronto for the Year 1898 (Toronto).—American Journal of Science, April (New Haven).—Popular Astronomy, April (Northfield).—Atlantic Monthly, April (Gay).—Morphologisches Jahrbuch, 27. Band, 1 Heft (Leipzig).—Agricultural Gazette of New South Wales, February (Sydney).—Mémoires de la Société de Physique, &c., de Genève, Tome xxxiii. Part 1 (Genève).

## CONTENTS.

	PAGE
A Science of the Sciences. By Prof. R. Meldola, F.R.S. . . . . .	577
The Uganda Protectorate . . . . .	579
Our Book Shelf:—	
Elliot: "The Wild Fowl of the United States and British Possessions."—R. L. . . . .	580
Monck: "An Introduction to Stellar Astronomy" . . . . .	581
Löb: "Electrolysis and Electrolysis of Organic Compounds."—T. E. . . . .	581
Ormerod: "Report of Observations of Injurious Insects and Common Farm Pests during the Year 1898, with Methods of Prevention and Remedy" . . . . .	581
Duff: "Notes from a Diary" . . . . .	582
Voorhees: "Fertilisers."—R. W. . . . .	582
Letters to the Editor:—	
Further Notes on Recent Volcanic Islands in the Pacific.—Sir W. J. L. Wharton, K.C.B., F.R.S. . . . .	582
Mosquitoes and Malaria.—The Manner in which Mosquitoes intended for Determination should be Collected and Preserved.—Ernest L. Austen . . . . .	582
Sunspots and Rainfall.—Alex. B. MacDowall . . . . .	583
Periodic Tides.—W. Bell Dawson; Prof. A. Wilmer Duff . . . . .	584
The Natural Prey of the Lion.—Kumagusu Minakata . . . . .	585
The Present Standpoint in Spectrum Analysis. By Sir Norman Lockyer, K.C.B., F.R.S. . . . .	585
Higher Commercial Education and the University of London. By Sir Philip Magnus . . . . .	588
William Rutherford. By J. G. M. . . . .	590
Notes . . . . .	591
Our Astronomical Column:—	
Tuttle's Comet (1899 b) . . . . .	595
Tempel's Comet (1873 II.) . . . . .	595
Variable Star Notes . . . . .	595
Spectrum of Saturn's Rings . . . . .	595
The Sun's Mean Temperature . . . . .	595
Sources of Important Minerals. (With Diagrams.) . . . .	596
On the Origin of Magneto-Optic Rotation. By Dr. J. Larmor, F.R.S. . . . .	597
University and Educational Intelligence . . . . .	597
Scientific Serials . . . . .	598
Societies and Academies . . . . .	598
Diary of Societies . . . . .	600
Books and Serials Received . . . . .	600