

and a half, it slowly darkens to a nearly normal shade, as the details come out more sharply. If the exposure has been correctly made, there will be no trace of fog. With stronger baths the picture comes out in the normal time, and has the normal shade. If the pictures are too dense, the remedy is to reduce the strength of the sodium carbonate solution, or to increase the amount of hypo in the bath. Very fine results are obtained with the sodium carbonate solution at half the strength given in Cramer's formula. When the plate has been sufficiently exposed, a negative of the object can usually be seen upon the plate before development. With long exposure this image is very distinct. It fades out in the bath, and the plate becomes clear. The shadows appear strongly, but indistinctly at first, and of a pink colour, and the high-lights still appear white. The solution remains clear. Too much hypo will cause turbidity and a loss of detail. When the plate is exposed in a printing frame under either a negative or a positive, an exposure of half a minute to diffuse daylight is ample with an ordinary negative. The plate may be over-exposed by placing it for a long time in direct sunlight, and it will then appear on development somewhat like an over-exposed negative. This has not yet been tried with hypo in the bath. Prof. Nipher showed a preliminary diagram, in which exposure and illumination of the developing bath were taken as co-ordinates. The zero condition was represented by a line, and the conditions for producing direct and inverted pictures were represented by areas. He also exposed and developed, in a common bath, in the lighted audience room, negatives printed from negatives, and positives printed from positives. The possible value of radio-active substances acting upon the developing plate in place of, or in addition to, light, was referred to as a most promising field for study.

DIARY OF SOCIETIES.

**THURSDAY, FEBRUARY 14.**  
 ROYAL SOCIETY, at 4.30.—Some Additional Notes on the Orientation of Greek Temples, being the Result of a Journey to Greece and Sicily in April and May, 1900: F. C. Penrose, F.R.S.—The Transmission of the *Trypanosoma Evansi* by Horse Flies, and other Experiments pointing to the Probable Identity of Surra of India and Nagana or Tsetse Fly Disease of Africa: Dr. Leonard Rogers.—On the Influence of Ozone on the Vitality of some Pathogenic and other Bacteria: Dr. A. Ransome, F.R.S., and A. G. R. Foulerton.—On the Functions of the Bile as a Solvent: B. Moore and W. H. Parker.—To be read *in title only*: On the Application of the Kinetic Theory of Gases to the Electric, Magnetic and Optical Properties of Diatomic Gases: G. W. Walker.—Hereditry, Differentiation, and other Conceptions of Biology: a Consideration of Prof. Karl Pearson's paper "On the Principle of Homotyposis": W. Bateson, F.R.S.  
 MATHEMATICAL SOCIETY, at 5.30.—The Distribution of Velocity and the Equations of the Stream Lines, due to the Motion of an Ellipsoid in Fluid Frictionless and Viscous: T. Stuart.—On Factorisable Twin Binomials: Lieut.-Colonel Cunningham, R.E.—Concerning the Abelian and Related Linear Groups: Prof. L. E. Dickson.—A Geometrical Theory of Differential Equations of the First and Second Orders: R. W. Hudson.—Brocardal Properties of some Associated Triangles: R. Tucker.—A Note on Stability, with a Hydrodynamical Application: T. J. A. Bromwich.  
 SOCIETY OF ARTS (Indian Section), at 4.30.—The Greek Retreat from India: Colonel Sir Thomas H. Holdich, K.C.I.E.  
 INSTITUTION OF ELECTRICAL ENGINEERS, at 8.—Capacity in Alternate Current Working: W. M. Mordey. (Adjourned Discussion.)  
**FRIDAY, FEBRUARY 15.**  
 ROYAL INSTITUTION, at 9.—Electric Waves: Right Rev. Monsignor Gerald Molloy.  
 GEOLOGICAL SOCIETY, at 3.—Annual General Meeting.  
 INSTITUTION OF MECHANICAL ENGINEERS, at 8.—Light Lathes and Screw Machines: J. Ashford.  
 EPIDEMIOLOGICAL SOCIETY, at 8.30.—The Epidemiological Aspects of Isolation Hospitals: Dr. Arthur Newsholme.  
**MONDAY, FEBRUARY 18.**  
 ROYAL INSTITUTION, at 3.—Origin of Vertebrate Animals: Dr. Arthur Willey.  
 SOCIETY OF ARTS, at 8.—The Bearings of Geometry on the Chemistry of Fermentation: W. J. Pope.  
 SOCIETY OF CHEMICAL INDUSTRY, at 8.—Discussion on the Occurrence and Detection of Arsenic in Manufactured Products.  
 VICTORIA INSTITUTE, at 4.30.—The Wahabias: S. M. Zwemer.  
**TUESDAY, FEBRUARY 19.**  
 ROYAL INSTITUTION, at 3.—Practical Mechanics: Prof. J. A. Ewing, F.R.S.  
 ZOOLOGICAL SOCIETY, at 8.30.  
 INSTITUTION OF CIVIL ENGINEERS, at 8.—The Nilgiri Mountain-Railway: W. J. Weightman.  
 ROYAL STATISTICAL SOCIETY (St. Martin's Town Hall, W.C.), at 5.30.—The Growth of Municipal and National Expenditure: The Right Hon. Lord Avebury, F.R.S.  
 ROYAL PHOTOGRAPHIC SOCIETY, at 8.—Imitative *versus* Creative—A Comparison: W. Edwin Tindall.  
**WEDNESDAY, FEBRUARY 20.**  
 SOCIETY OF ARTS, at 8.—Some Features of Railway Travelling, Past and Present: Frederick McDermott.

GEOLOGICAL SOCIETY, at 8.—Submerged Valleys opposite the Mouth of the River Congo and of Western Europe: Prof. E. Hull, F.R.S.—The Geological Succession of the Beds below the Millstone Grit Series of Pendle Hill and their Equivalents in other Districts in England: Dr. Wheelton Hind and J. Allen Howe.  
 ROYAL METEOROLOGICAL SOCIETY, at 7.30.—Report on the Phenological Observations for 1900: E. Mawley.—A Review of Past Severe Winters in England, with Deductions therefrom: Albert E. Watson.  
 ROYAL MICROSCOPICAL SOCIETY, at 7.30.—Exhibition of Bacteria and Blood Parasites: C. Beck.

THURSDAY, FEBRUARY 21.

ROYAL SOCIETY, at 4.30.  
 LINNEAN SOCIETY, at 8.—On the Affinities of *Alouopus melanoleucus*, Alph. Milne-Edw.: Prof. E. Ray Lankester, F.R.S., and R. Lydekker, F.R.S.—Étude d'une espèce nouvelle de Lépapèdes: M. A. Gruvel.  
 INSTITUTION OF ELECTRICAL ENGINEERS, at 8.—If the discussion on Mr. Mordey's paper is closed, the following paper will be read:—The Electrical Power Bill of 1900: Before and After: W. L. Madgen.  
 CHEMICAL SOCIETY, at 8.—(1) Isomeric Hydrindamine Mandelates and Phenylchloroacetylhydridamines; (2) Isomeric Benzylhydridamine bromoamphorsulphonates and some Salts of *d,l*-Hydrindamine: F. Stanley Kipping and H. Hall.—Condensation of Phenols with Esters of the Acetylene Series. IV. Benzo- $\gamma$ -pyrone and its Homologues: S. Rubemann and H. W. Bausor.—Constitution of Bromocamphoric Anhydride and Camphanic Acid: A. Lapworth and W. H. Lenton.—The Action of Acetylchloro- and Acetyl bromo-aminobenzenes on Amines and Phenyl hydrazine: F. D. Chattaway and K. J. P. Orton.

FRIDAY, FEBRUARY 22.

ROYAL INSTITUTION, at 9.—Metals as Fuel: Sir W. Roberts-Austen, F.R.S.  
 PHYSICAL SOCIETY, at 5.—How Air subjected to X-Rays loses its Discharging Property, and how it Discharges Electricity: Prof. Emilio Villari.—(1) On the Propagation of Cusped Waves and their Relation to the Primary and Secondary Focal Lines; (2) On Cyanine Prisms, and a New Method of Exhibiting Anomalous Dispersion: Prof. R. W. Wood.  
 INSTITUTION OF CIVIL ENGINEERS, at 8.—Automatic Coupling: J. L. Cridlan.

SATURDAY, FEBRUARY 23.

ROYAL INSTITUTION, at 3.—Sound and Vibrations: Lord Rayleigh, F.R.S.  
 ESSEX FIELD CLUB (Essex Museum of Natural History Stratford), at 6.30.—Recent Work in Molluscan Morphology: Prof. G. B. Howes, F.R.S.

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